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Massachusetts Administrative Council on Toxics Use Reduction

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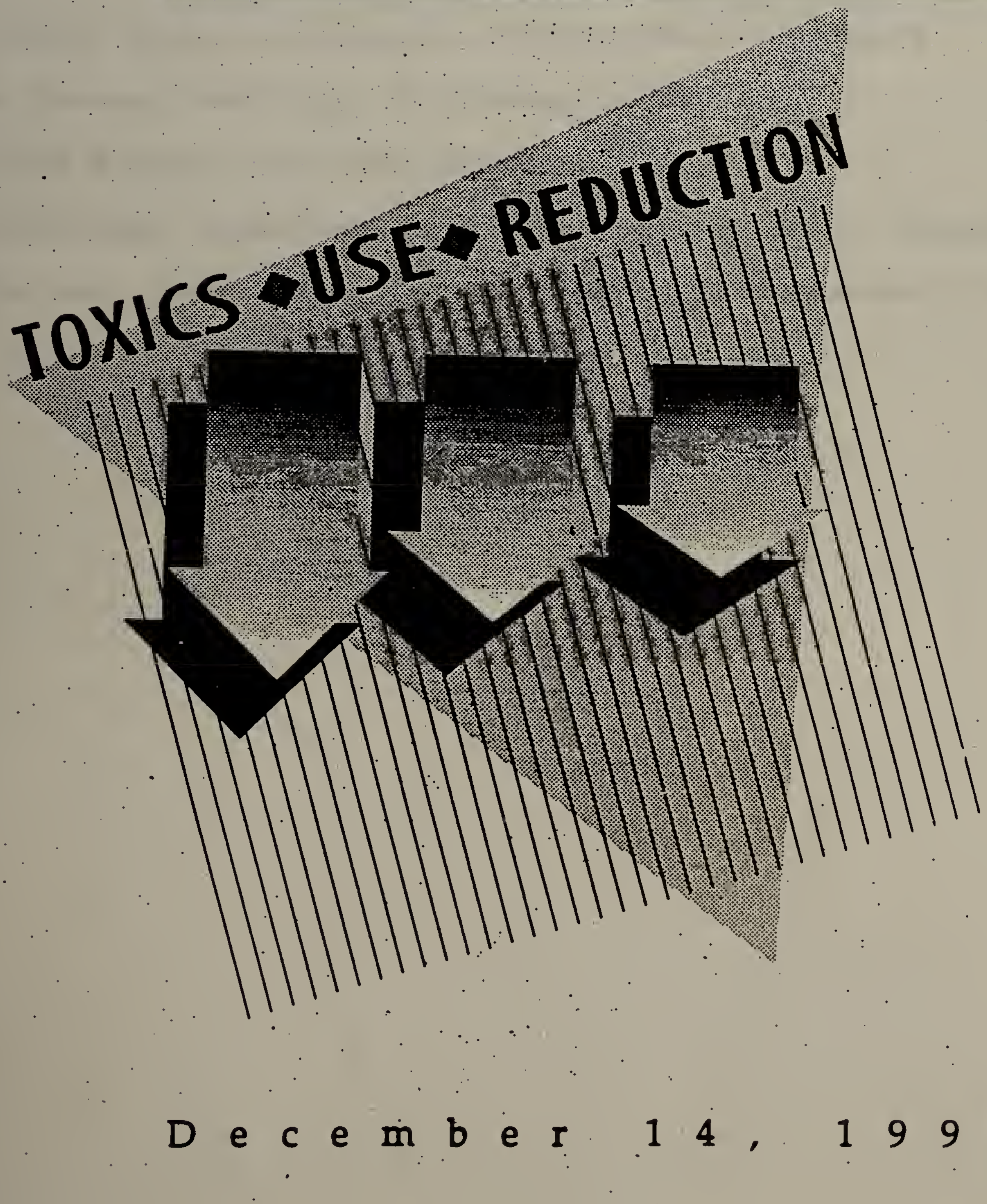
Fiscal Year 1995 Annual Report



December 14, 1995

Massachusetts Administrative Council
on
Toxics Use Reduction

Trudy Coxe, Chair, Secretary of Environmental Affairs

Gloria Larson, Secretary of Economic Affairs

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December 14, 1995

Dear Reader:

The Massachusetts Administrative Council on Toxics Use Reduction is pleased to present this Fiscal Year 1995 Annual Report in accordance with Section 4(d) of MGL 21I, the Toxics Use Reduction Act (TURA).

Fiscal Year 1995 was a great year for pollution prevention in Massachusetts. Not only did the TURA agencies work hard and accomplish much, but data is coming in to show that our efforts are really paying off. Just look at the figures from this year's 29 Governor's Award entries: 5.7 MILLION pounds of chemical use reduced, 1.5 MILLION pounds of waste reduced and 431 MILLION gallons of water saved! These numbers represent significant environmental improvement. And what did these reductions cost the companies? Nothing, except perhaps a little more black ink. The reductions actually SAVED the companies a staggering $5.9 MILLION.

This is the message that the TURA Program must send loud and clear in the year ahead: toxics use reduction leads to environmental AND economic improvement. It makes good business sense to look for opportunities to use less chemicals and to generate less waste, and it's just plain good government to promote cost-effective ways to improve the environment.

Again, the Council wishes to thank the members of the Toxics Use Reduction Advisory Board and its chair, Sue Swedis for their efforts, as well as all the TURA staff, most notably Barbara Kelley, Ken Geiser, Steve DeGabriele, and Gina McCarthy. We look forward to the year ahead with renewed enthusiasm.

Cordially,

Trudy Coxe

100% RECYCLED PAPER

ANNUAL REPORT OF THE ADMINISTRATIVE COUNCIL ON TOXICS USE REDUCTION FISCAL YEAR 1995

This document is the Fiscal Year (FY) 1995 Annual Report of the Administrative Council on Toxics Use Reduction, a public body created in 1989 by the Toxics Use Reduction Act (TURA) to coordinate the implementation of the statute. Information presented in this report supplements that contained in the Council's first Annual Report, published in November 1994, which summarized the accomplishments of the TURA Program in its first four years, from 1990 to 1994, and offered a comprehensive discussion of the strength and weaknesses of the program. The first report concluded:

> *" Since the establishment of the statute, the TURA Program has succeeded in establishing the foundation necessary to effectively promote toxics use reduction in the state. The program is in place to provide the opportunity to substantially change the way both the regulators and regulated community do business over the coming years."*
>
> *" The TURA program is nationally and internationally recognized as a leader in the promotion of toxics use reduction."*

To continue to build upon the strengths of the Program and to address certain weaknesses, this first Annual Report also set out strategic plans and Council directives to guide the activities of the Program in Fiscal Year 1995. A careful reader or one unfamiliar with the TURA Program may want to refer to this prior report for additional background on the history, purpose and major goals of TURA, and the responsibilities of each of the TURA agencies: the Council, the TUR Advisory Board, the Office of TUR Assistance and Technology (OTA), the Toxics Use Reduction Institute (TURI); and the Department of Environmental Protection (DEP) and it's TURA Program Office.

SUMMARY OF TURA PROGRAM PROGRESS IN FISCAL YEAR (FY) 1995

The major focus of the Program's FY 1995 activities was to coordinate the agencies' efforts to more efficiently implement the program and to demonstrate strong commitment on the part of the Administration to TUR and the many goals of the statute. As this annual report shows, more visible leadership and commitment has led to greater accountability of the Program to its fee paying industries. It has also allowed the Program to demonstrate a more visible commitment to the environmental community and other stakeholders within Massachusetts who consider TURA a model for future sustainable environmental protection efforts.

Major Program accomplishments can be categorized in the following areas: Program Accountability and Evaluation; Integration and Coordination; Improved Data Quality and a Strong Focus on TURA Planning.

- **Program Accountability and Evaluation of TUR Success**

Over the past year, the TURA Program has taken action to ensure the Program's accountability to its many stakeholders. Close attention has also been paid to focus TURA resources on the specific statutory mandates and to tailor the services of the Program to closely match TURA's goals.

In November, 1994 the Council distributed its first Annual Report on the TURA Program and, as reflected in the FY 96 budget, led a successful administrative effort to stop the diversion of TURA industry fees to support the state's waste site cleanup program known as 21E.

TURI published "Toxic Chemical Management in Massachusetts: the Second Report on Further Chemical Restriction Policies".

The Science Advisory Board met monthly and thus far has recommended the delisting of five metals in alloy form under certain conditions.

In addition, a program-wide effort to gather additional data on the impact of the Program's services on the use of toxics and the generation of toxics waste, and to better quantify the benefits of TUR in terms of increased efficiency and direct cost savings began. The Program took a closer look at where we are in relation to the one numerical goal of the statute: a 50% byproduct reduction through TUR by 1997, and began a comprehensive effort, under TURI's direction, to evaluate the TURA Program and its impact on TUR in the Commonwealth. Data gathered thus far documents TUR success.

DEP's First Annual Report to the Legislature: "Progress Towards the Byproduct Reduction Goal of the Toxics Use Reduction Act" shows:

- *byproduct generated by the industrial categories and chemicals subject to TURA reporting since 1990 have decreased statewide by 14.5 percent or 17.7 million pounds between 1990 and 1993*
- *companies in the industrial categories subject to TURA reporting since 1990, also projected a 23 percent decrease in byproduct by 1998. The top companies with the highest use of chemicals reduced their use of the original Toxics Release Inventory (TRI) chemicals by 32 percent and byproduct by 15 percent between 1990 and 1993*
- *58 percent of the facilities that expect to file annual reports in 1998, have reduced the use of one or more chemicals below reporting thresholds, or plan to do so by 1998*

OTA data shows that companies they have assisted have been even more successful than TURA filers overall.

- *byproduct generated by OTA assisted companies has been reduced by 16%, from 38 million pounds in 1990 to 32 million pounds in 1993*
- *a total of 37 OTA assisted companies have even reduced their toxics to the point where they no longer have to report*
- *OTA assisted companies have reduced their toxics byproduct per unit of product to a greater extent than other TURA companies*
- *savings of $3.6 million and reductions of five million pounds of toxic pollution have been documented from the information obtained from fewer than 20 percent of the companies with whom OTA has worked*

A DEP survey of 59 firms conducted during a TURA plan inspection blitz in the summer of 1994 showed that 77 percent of the companies thought the planning process was useful and 92 percent plan to implement TUR.

The summary of savings from the 29 entries received for the 1995 Governor's Award for Toxics Use Reduction show:

- *5,737,075 pounds in reductions in toxics chemical use*
- *1,516,800 pounds in reduced hazardous waste generation*
- *431,327,915 gallons of water saved*
- *$2,345,684 saved in reduced chemical purchases*
- *$1,478,996 saved in avoided costs for compliance fees, insurance, etc.*
- *$2,053,456 saved by reduced water use*

- **Integration and Coordination**

The Council in its first year with full time staff, took on the leadership role intended in the statute. The result was increased coordination and integration among the TURA agencies to maximize the Program's resources.

A TURA policy integration group called the TIP Task Force, was formed to coordinate policy among the TURA agencies, to promote interagency cooperation and to bring to the table each agency's unique perspectives and knowledge of TUR to help guide future Program and agency development. This group's work has resulted in:

- *integrated policy development: each agency now involves representatives from the other TURA agencies in the development of policies, from their earliest inception, to promote opportunities for TUR: one example is DEP's Alternative Penalties Policy which received input from TURI and DEP to ensure it success as a way to encourage TUR*

- *integrated regulation development: TURA regulations as well as non-TURA DEP regulations are developed with constant communication and support from the three agencies: one example of a TURA regulation is DEP's User Segment regulations which began with a list of process codes developed by key representatives of the three TURA agencies, representatives of the TUR Advisory Board and TUR Planners; a second example of a non-TURA regulation is DEP's draft blanket wash regulations for the printing industry that when finalized will increase incentives to use solutions with low volatile organic compounds (VOCs) as an alternative to high VOC solutions.*

- *increased interagency training: 22 DEP permit staff attended a four-day training developed by TURI, OTA and DEP on building TUR into permitting*

The Science Advisory Board (SAB) which is staffed by and reports to TURI, is also now routinely attended by a representative of each of the TURA agencies. Staff from OTA and DEP review the recommendations of the SAB and provide input to TURI to ensure that all pertinent considerations are raised and addressed during the deliberations of listing and delisting requests.

TURI, OTA and DEP teamed up to develop training programs for TUR Planners: for example a two day Continuing Education Conference was held in FY 95 that was attended by over 350 people.

One cooperative venture started this past year is directed primarily at the TURA goal of promoting the competitive advantage of Massachusetts business while advancing innovation in toxics use reduction and management. The STrategic Envirotechnology Partnership (STEP) is an administrative effort to use the state's resources to more effectively promote new environmental technologies. TURA staff played a pivotal role in STEP's formation and now play a key role in its implementation. For TURA and the industries that pay TURA fees, STEP is a means of identifying and promoting advances in TUR technologies. Through STEP, the TURA agencies are coordinating research, conducting technology demonstrations, identifying *industry technology needs, and closely aligning their technology transfer capabilities. This initiative allows TURA to leverage its funds with those of STEP and other federal programs that are designed to promote innovative technologies. So far, eight pollution prevention technologies are being serviced through STEP and technology demonstrations at Large Quantity Toxics Users (LQTUs) are planned for three of those technologies.*

- **Improved Data Quality and Accessibility**

In order to assess the impacts of the TURA Program on the six goals of the statute, good data is needed. The Program further expanded its efforts to increase the reliability of the TURA data and to make the data more "user friendly" and accessible.

DEP, OTA and TURI, as part of the implementation of a Pollution Prevention Incentive to States (PPIS) Grant to measure progress towards pollution prevention, worked together to correct reporting errors from the early years of the Program. The three agencies have also been working, as part of the PPIS Grant and the Program-Wide Evaluation process, to develop and implement the methodology for estimating 1987 use, byproduct, and emissions against which progress should be measured.

DEP continued to institute its data quality control procedures. 10% of the reports filed each year are audited for data entry accuracy. Since 1993, an automated internal consistency check is used to review each report and to generate computerized "exception reports" when inconsistencies appear in the data received. These reports are followed up by TURA Office staff.

DEP developed a myriad of reports designed to compile and analyze Toxics Use Reduction data including, most recently, Plan Summary data submitted by large quantity toxics users.

For the first time in the 1994 reports, companies submitted process code information which will be incorporated into analytical reports.

DEP has also substantially implemented the "end user querying tool" purchased through a 1994 Pollution Prevention Incentives Grant from EPA. This tool has significant implications for making the TURA data more readily available to the public since it allows TURA technical staff, and eventually will allow the public, to develop and run many analytical reports without the assistance of a computer programmer. This system will also allow DEP to download the basic reports into Lotus, Dbase or other similar programs for distribution to the public.

DEP also worked with the Toxics Use Reduction Institute to identify and then eliminate problems with the software used to down load the entire TURA database to an ASCII file that can be distributed to the public for just the cost of the disk.

OTA put all the data contained in the extract files on the "The OTA Connection," an electronic bulletin board which became accessible to anyone with a computer and modem in the Fall of 1994. Users can access various TURA data and program information as well as a list of upcoming events and important regulatory deadlines.

- **Focus on TUR Planning**

FY 1995 was the first year in which TURA Plans were submitted to DEP. These plans are the heart of TURA and the focal point of much of the Program's efforts to promote TUR. Many agency activities were directed at improving the quality of TURA Plans.

DEP, through aggressive compliance and enforcement, made it very clear that the Commonwealth was *taking all the TURA requirements - including the planning requirement - very seriously. DEP conducted a TURA Plan Blitz in the fall of 1994. The Blitz included the inspection of 59 plans in the field and resulted in enforcement actions in 15 percent. In FY 1995, DEP issued a total of 220 Notices of Enforcement conferences, 83 Notices of Non-compliance, and 29 Administrative Consent Orders with penalties.*

The DEP TURA Amnesty Program which ended in late 1994, brought 59 firms into the system and generated $582,054 in TURA fees.

DEP conducted on-site inspections at 60 LQTUs and at 940 facilities who, prior to inspection, were not TURA filers. In total, 30 companies were issued enforcement for their TURA violations, including 6 facilities cited for failure to file. $66,500 in penalties and back fees were collected.

In December 1994, TURI held a TUR Planner debriefing to draw on planners' experiences to learn what did and did not make sense, from the planners' viewpoint, in the first round of planning. More than 50 TUR Planners participated and staff from all the TURA agencies listened and learned.

The quality of TURA plans in great part relies on the quality of TUR Planners. As of FY 1995, 485 TUR Planners were certified and 37 had already been recertified by DEP. Much of the efforts of TURI and to a somewhat lesser extent, the other TURA agencies, went towards supporting the efforts of TUR Planners.

TURI has provided TUR Planner training to over 625 individuals. In FY 95, TURI updated their curriculum for clarity and tone, corrected and updated factual information, and expanded and refined its case studies.

A survey of TUR Planners was conducted to determine continuing education learning needs. TURI used the survey to guide the development of a Continuing Education Conference (attended by 364 participants), 20 courses and two industry specific days.

TURI was also instrumental in the start up of the new TUR Planners Association. This private association will strengthen the work of the TUR Planners and the Program will offer its support as a mechanism to promote sound TUR planning.

As part of the recertification process, DEP worked with TURI and OTA to develop a Recertification Guidance Document, a Planner Recertification Application, and a Planner Approval Credit Form for advance approval of continuing education credits. These documents were sent to all TUR Planners and are currently available from the Department's Info-Line ((617) 338-2255). DEP continues to work closely with TURI and OTA to develop more courses that are pre-approved for recertification credit and to make this information available to all TUR Planners.

SUMMARY:

The TURA program continues to be recognized nationally and internationally as a leader in the promotion of toxics use reduction. Now, as a result of the above efforts, we are confident that the many stakeholders in Massachusetts who supported the passage of the act and who continue to watchdog its progress, will be assured that the TURA Program is on track.

The infrastructure of the Program is in place. 485 TUR Planners have been certified and recertification has begun. The first year of TURA Plans have been filed and are under close scrutiny. User segment work is well on its way. The Science Advisory Board (SAB) is up and running. A program-wide evaluation process has been designed and is being implemented. The Program is well positioned to meet the challenges ahead.

TURA PROGRAM STRATEGY FOR FY 1996

While the TURA Program will continue to strive for improvement in its infrastructure and the delivery of its services, it must also be recognized that TUR is an effort to promote fundamental change in the way companies and regulatory agencies operate. Real success requires that momentum for this change begin to pick up within industry and the regulated community, and eventually within communities and among consumers.

For this reason, the Council will focus greater attention over the coming year, on efforts to promote increased understanding of, and support for, TUR within industry, the regulatory agencies, communities and consumers. This requires that we better quantify and communicate the value of TUR in increasing efficiency, saving money, and improving environmental compliance and protection efforts.

Beginning in FY 96, the Program will pay closer attention to promoting the benefits of TUR Planning as an opportunity for companies to: promote total quality management (TQM), access or maintain green markets, and prepare for certification under voluntary quality and environmental commerce standards such as ISO 14001. These voluntary international commerce standards may in the near future represent critical factors in determining the ability of Massachusetts' firms to market products internationally. The TURA program should also begin to look at ways in which compliance with these voluntary standards ensures sound compliance with TUR Planning.

The Fiscal Year 1996 strategy of the Administrative Council, outlined below, sets out the overall Program plan to accomplish these broad goals. In addition, each agency has designed its strategy to support these overall goals and the following specific recommendations of the TUR Administrative Council for FY 1996.

ADMINISTRATIVE COUNCIL RECOMMENDATIONS TO PROMOTE TUR IN MASSACHUSETTS

- Continue to work with the Legislature to ensure that no funds are diverted to support the 21E Program.
- Continue to work with the Administration and the Legislature to find an alternate source of funding to support the Cape Cod Community College (CCCC) job training program. If a more appropriate source of funds are not identified, the Council should pursue efforts to explore ways in which the training program can promote pollution prevention efforts.
- Continue efforts to eliminate the targeting of TURI research dollars to the Microscale Technology Center. In addition, work with the Center to integrate their efforts with other related TURA Program activities.
- Seek additional input from the TUR Advisory Board on the future of the TURA Program. Hold a TURA Future's Day to allow focused discussion and strategic planning.
- In the meantime, work diligently to implement the FY 1996 overall TURA Program strategy (refer to the FY 1996 Strategy of the Administrative Council detailed below) which focuses TURA Program-wide activities in the following areas:
    - Continuous Improvement of the TURA Program (including a pilot of electronic data filing)
    - Integrating TUR into the Culture of Business
    - Integrating TUR into the Culture of Regulators and Public Agencies
    - Increasing Awareness of TUR in Communities and the General Public
    - Innovative Pollution Prevention (P2) Technology Development as a Method of Increasing the Competitiveness of Massachusetts' Industry
    - Program-Wide Evaluation

THE ADMINISTRATIVE COUNCIL ON TOXICS USE REDUCTION
FY 1995 ACCOMPLISHMENTS

As the coordinating agency for TURA activities, the TUR Administrative Council is responsible for overall Program progress as well as specific TURA mandates. The Council met every other month to publicly discuss the Program activities, set policy and provide staff direction.

Members and designees of the TURA Administrative Council in FY 1995 included Trudy Coxe, Secretary of Environmental Affairs and Chair (Leo Roy, designee), Gloria Larson, Secretary of Economic Affairs (Barbara Kessner-Landau, designee), Christine Morris, Secretary of Labor (Tom Nee, designee), David Mulligan, Commissioner of the Department of Public Health (Suzanne Condon and Kevin Costas, alternate designees), and David Struhs, Commissioner of the Department of Environmental Protection (Tom Powers, designee).

Progress achieved in FY 1995 is summarized below.

Increased Coordination and Integration of TURA Agency Efforts

Fiscal Year 1995 was the first year with dedicated full time Council staff to oversee program planning and implementation. The hiring of a full time director in June 1994 has allowed the Council to assume the leadership role intended in the statute. It has also fostered better communication among the TURA agencies and with the public, and led to an increase in interagency initiatives.

Biweekly meetings are held of a TURA Coordinators Group which consists of TURA agency heads and other interested TURA staff. The Coordinators review, discuss and integrate all activities to avoid duplication and to maximize agency resources.

The TURA policy integration workgroup (called the TIP Task Force) brings together each month policy staff from all TURA agencies. The TIP task force works to coordinate all policy work, resolve interagency issues, and help to direct the future program agenda.

Program Accountability

On November 29, 1995, the Council released its first annual report as required under the statute. This report was a major step in producing a detailed accounting of the use of TURA industry fees and in summarizing in one document the impressive accomplishments of the TURA agencies. It was also an honest presentation of both the strengths and weaknesses of the Program and the report set an aggressive agenda for the coming year ahead.

The Council successfully orchestrated an effort spearheaded by the Executive Office of Environmental Affairs, to stop the legislative diversion of TURA Fund monies to the 21E Program. Given the large FY 1995 revenues collected (see budget section), this effort saved the diversion of nearly $1,000,000. Efforts to find an alternative source of funds for the Cape Cod Community College Job Training Program and to stop the targeting of TURI research funds to the Microscale Technology Center, were not successful. However, TURI did seek out and receive an extra $300,000 from the Legislature in FY 1996 to offset the targeting of their research dollars to the Microscale Center (see budget section).

The Council also kept close watch on some of the previously stalled TURA mandates. While many activities are worthwhile to pursue in the interest of TUR, the Council paid careful attention to direct resources in a manner consistent with the letter and spirit of the law.

The Secretary of Environmental Affairs continued to receive and process TURA fee waiver requests from Large Quantity Toxics Users (LQTUs). A total of six TURA fee waiver requests were received in FY 1995. Full waivers and/or payment plans were granted to five of the six.

Updating the TUR List

The Council promulgated regulations to update the list of substances regulated under TURA in December 1994 to keep it consistent with changes in EPCRA and CERCLA as required under the statute. In 1995, the Council again amended its list of TURA regulated substances, but in an effort to avoid confusion and misunderstandings, the Council simply adopted the federal EPCRA and CERCLA Lists as of January 1, 1995.

Three additional policies were also adopted by the Council to remove confusion and clarify policies relative the TUR List.

- The Council now refers all chemicals delisted from the EPCRA List that are CERCLA reportable to the Science Advisory Board for study.
- Companies are no longer required to report on chemicals that, because of delisting late in the fiscal year, are no longer on the EPCRA and CERCLA Lists but technically remain on the TUR List. The Council catches up with these federal delistings when the TUR List is updated the following January.
- Companies are no longer required to pay two fees for chemicals that are not specifically listed on EPCRA or CERCLA but are TURA reportable under two separate chemical categories. For example, lead chromate is a chemical compound that is not specifically listed, but falls within two chemical categories: lead and chrome. This new policy continues to require companies who use lead chromate to file two Form Ss, one to report lead byproducts and another to report chrome byproducts, but it allows the company to pay only one fee based on the amount of lead chromate used.

The Science Advisory Board (SAB) has been meeting monthly to make recommendations to TURI on requests to list and delist chemicals from the list of TURA reportable substances.

Regulatory Barriers and Technological Constraints to TUR

The report prepared by TURI on regulatory constraints that inhibit the promotion of TUR was reviewed by the TIP Task Force and a number of specific actions were proposed for consideration as FY 1996 tasks. In addition, DEP has already begun to take action on some critical issues that relate to the volatile organic compounds (VOCs) found in blanket washes for printers and in aqueous cleaners. When finalized, these regulations will encourage the use of alternatives to high VOC solvents by eliminating some regulatory barriers that currently inhibit their use.

The Council has met its statutory obligation to review draft regulations to encourage opportunities for TUR. Council comments were filed on draft air and hazardous waste regulatory revisions proposed by DEP.

In addition, the Council has focused a considerable amount of attention and energy in the area of emerging toxics use reduction technologies. The Council's director and one full time OTA staff person coordinate the STrategic Envirotechnology Partnership (STEP) for EOEA. STEP is a new administrative effort to promote the development and use of new environmental technologies. STEP offers tremendous opportunities to direct research dollars towards the toxics use reduction needs of Massachusetts industries, as well as to identify and transfer new technological advances in TUR. STEP is an area of growing involvement for all the TURA agencies as we begin to focus greater attention on ways to address the TURA goal of increasing the competitiveness of Massachusetts companies through the promotion of TUR and innovative technologies.

THE ADMINISTRATIVE COUNCIL ON TOXICS USE REDUCTION
FY 1996 STRATEGIC PLAN

In FY 1996 the Administrative Council on TUR will focus attention on coordinating agency activities to address the overall Program goals as detailed below.

Many of the specific tasks to be addressed by the Council can be found in a report prepared by the TIP Task Force which summarizes 20 potential activities. This list has been publicly distributed and comments have been received. Additional direction on FY 1996 TURA activities was sought from TURA staff at an all day planning workshop. Staff provided input to the Council and the TURA agency heads which helped define program priorities. Activities to be undertaken this coming year fall within the following Program areas:

Continuous Improvement of the TURA Program: Efforts to further integrate the work of DEP, OTA and TURI will be taken, such as:
- interagency staff and project meetings
- cross training of TURA staff to improve staff skills
- integrated training and support to TUR Planners
- cooperative TUR technology research and demonstrations
- integrated policy and regulatory development
- OTA and TURI support to DEP in their streamlining initiative
- the piloting of electronic filing of TURA data

Integrating TUR into the Culture of Business: Efforts will be directed toward:
- the development of better data on economic benefits of TUR to businesses in terms of money saved, increased competitiveness, access to green markets, ISO 9000 and ISO 14001
- industry sector technology needs assessments, technical research, technical assistance and technology transfer, and technology demonstrations
- the assessment of specific industry or TUR Planners concerns with TURA such as the cost of toxics policy, the definition of integral recycling as it relates to batch processors, and planning requirements for chemical distributors
- outreach in plain language
- TUR education for financing institutions
- expediting the recommendations from TURI relative to chemical listings and delistings

Integrating TUR into the Culture of Regulators and Public Agencies: Efforts will be directed toward:
- integrating TUR into all the on-going streamlining and reorganization efforts at EOEA and DEP, including DEP's bold new Environmental Results Program (ERP), an initiative to improve environmental compliance by moving away from certain permits towards self-certification and increased auditing and enforcement
- starting up an Interagency Group that will report to the Council on issues such as TUR barriers or opportunities in DOD, FDA and OSHA regulations; insurance rate relief and tax relief
- continuing and enhancing the pollution prevention emphasis in the Clean State initiative: the implementation of State Executive Order No. 350 requiring all state agencies to develop compliance schedules for correcting environmental violations and to develop pollution prevention/resource conservation plans

Increasing awareness of TUR in Communities and the General Public: These efforts focus on education at the community level and support of local environmental efforts through TUR education:
- "TURN": TURIs networking grants to assist the public in learning how to access and use TUR information
- additional work with DEP's Industrial WasteWater (IWW) Program to focus on OTA's work to support

Publically Owned Treatment Works (POTWs) through the POTW Pre-Treatment Forum and its Critical Parameter's Project

- continue to explore ways of expanding the work with schools and the Household Hazardous Waste (HHW) efforts undertaken by OTA
- continue OTA's work with the EOEA's watershed initiative to focus on the opportunities that pollution prevention offers to address point and non-point source of water pollution
- expand TURI's work in developing TUR curriculum for use in vocational technical schools

Innovative Pollution Prevention Technology Development as a Method of Increasing the Competitiveness of Massachusetts Industry: As companies begin to update their plans, constraints imposed by technology limitations will become more and more apparent as a factor in limiting industries' ability to find and/or implement TUR options. STEP will play a major coordinating role in the following efforts:

- Identification of technology needs
- Coordination of research efforts
- Setting up technology demonstrations
- Optimizing technology transfer efforts

Program Evaluation: The Council will ensure continued involvement of all TURA agencies in the overall Program Evaluation effort, including the development of a 1987 baseline by which byproduct reductions through TUR can be measured.

THE TOXICS USE REDUCTION ADVISORY BOARD
FY 1995 ACCOMPLISHMENTS

Throughout FY 1995, the TUR Advisory Board, chaired by Susan Swedis, met each month to provide essential comment and direction to the Council and TURA agencies on implementation of the TURA program. The Board also set up a number of ad hoc committees that allowed them to participate actively in a number of key Program initiatives. These committees and the work accomplished is summarized below.

Fee Ad Hoc Committee: The Fee Committee, chaired by Kathy Hearn, met in early FY 95 to determine a set of recommendations for the use of surplus TURA Funds. Although the recommendations of the Committee to set aside money to improve data accessibility and to rebate a portion of 1990-1991 industry fees were not carried out (no surplus funds were available), the recommendations were approved by the Advisory Board. The process that the Committee used to reach its recommendations and the discussion of the recommendations at the Advisory Board served to bring all stakeholders to the table in a healthy debate.

User Segment Committee: The user segment committee, chaired by Gary Siegel, was set up to provide input and assistance to DEP in the development of TURA user segment regulations. The group involved a variety of active stakeholders who met numerous times and reached a consensus on a list of Process Codes which DEP incorporated into the TURA Form S as a first step in the definition of user segments.

Form S Committee: The Form S committee, chaired by Tim Hawes, was also set up to provide input and assistance to DEP on identifying and reviewing proposed changes to the Form S and Plan Summary, as well as establishing the requirements for Plan Updates.

Governor's Awards Committee: The Governor's Award Committee, chaired by Gretchen Latowsky, received 29 applications and nominated five award recipients. The five winners were presented an award for outstanding achievement in TUR by Lieutenant Governor Paul Cellucci on June 1st at a luncheon ceremony. Recipients included Barnstable County, Benjamin Moore and Company, Hampden Papers Inc., Northrop Grumman Corporation, and Star Plating Co. The following figures are a clear indication of the potential that TUR offers to the companies and communities across the state.

Summary of Savings from the 29 Entries for the 1995 Governor's TUR Award:

- 5,737,075 pounds in reductions in toxics chemical use
- 1,516,800 pounds in reduced hazardous waste generation
- 431,437,915 gallons of water saved
- $2,345,684 saved in reduced chemical purchases
- $1,478,996 saved in avoided costs for compliance fees, insurance, etc.
- $2,053,456 saved by reduced water use

Program Evaluation Multi-Stakeholder Group: Kevin McManus represented the Board on this group which is helping to guide the TURA Program-wide evaluation effort.

TUR ADVISORY BOARD
FY 1995 STRATEGIC PLAN

The Board intends to continue the efforts of the above committees, with the exception of the Fee Committee. In addition, the Board hopes to actively participate in a data group to look at ways of improving the quality and accessibility of TURA data such as the piloting of electronic data filing, and to support the work of the Interagency Task Force being created by the TURA Administrative Council.

OTA: THE MASSACHUSETTS OFFICE OF TECHNICAL ASSISTANCE FISCAL YEAR 1995 ACCOMPLISHMENTS

OTA's established mandate under The Toxics Use Reduction Act is to "provide technical assistance to toxics users and small quantity toxics users to assist them in achieving toxics use reduction". By 1993 it had established five regional teams, and special project staff, and was making more than 300 site visits to toxics users per year. As of the end of FY 1995, OTA had made over 1000 site visits, had held close to 200 public events and made presentations at about 200 others, reaching an estimated direct audience of over 15,000. Publication and dissemination of case studies, information packets, brochures, reports and articles promoting toxics use reduction technologies and methods reached an additional audience. The office assisted many companies in coming into compliance, and in performing better financial analysis so that the value of TUR projects would be more apparent. The office helped enforcement agencies to reorient their policies towards prevention and assistance, and worked with business groups to foster better understanding of the connections TUR affords between environmental and economic progress.

During FY '95, OTA performed analyses of TURA reporting data to assess the Office's effectiveness. The results indicate TUR progress. The available data for the period from 1990 to 1993 shows that companies with whom OTA has worked have reduced their toxic byproduct per unit of product produced to a greater extent than companies with whom OTA has not worked. In aggregate, companies with whom OTA has worked reduced their byproduct by 16 percent (from 38 million pounds in 1990 to 32 million pounds in 1993). Another 37 companies that had received OTA assistance reduced their toxics use to below TURA reporting threshold levels for large quantity toxics users.

One of the goals of the Toxics Use Reduction Act is to promote the competitive advantage of Massachusetts manufacturers while advancing innovation in toxics use reduction and management. In 1994, OTA documented savings by companies of $3.6 million (and reductions of five million pounds of toxic pollutants) from TUR activities. This total, derived from information from fewer than 20 percent of the companies with whom OTA worked, is a strong indication that TUR is a successful strategy for achieving both environmental and economic progress. EPA prominently featured this finding in its Spring 1995 report on pollution prevention accomplishments.

OTA's experience and success with providing toxics use reduction technical assistance has become recognized nationally and even internationally. OTA this year, as it has every year, responded to requests for information about the Office from representatives of many countries including Japan, China, Ireland, Scotland, Germany, Chile, Canada, Portugal, Poland, the Baltic states, and the European Community.

The list of OTA's accomplishments during FY '95 is extensive. The engineers and scientists on staff continued to provide direct assistance to companies and expand outreach efforts. Several new partnerships were developed to expand the network of agencies and programs that can help OTA spread the concept of toxics use reduction and its associated economic benefits. Many new policy initiatives were undertaken to incorporate TUR into the rules, regulations, and policies of state and federal government. And special efforts were begun to advocate for innovative technologies that can help manufacturers maintain their competitive edge while improving their environmental performance.

Promoting TUR through Technical Assistance and Outreach

The core of OTA's mission is to provide toxics use reduction technical assistance to Massachusetts manufacturers and perform outreach about the benefits of toxics use reduction. Among the accomplishments in FY '95:

- OTA's five teams of engineers and chemists made 344 on-site visits to companies; 124 were to new companies, 220 were return visits. Thirty-seven percent of the new visits were the result of referrals by regulators or other agencies (Figures 1 and 2).

- OTA sponsored or co-sponsored 40 public events, reaching a combined audience of approximately 2,000 people. Highlights include a statewide series of workshops on DEP's clean air Reasonably Available Control Technologies (RACT) standards affecting small businesses and TUR strategies to help with compliance; a collaborative effort with the Neponset River Watershed Association and the MWRA on a workshop titled "TUR For Machine Shops"; a technology transfer conference featuring electron beam technology, a solventless method of coating and curing.

- OTA staff were guest presenters at approximately 40 additional events sponsored by other agencies and organizations, including national and regional trade association meetings, and meetings of local emergency response officials and other technical assistance and regulatory program staff.

- "The OTA Connection," an electronic bulletin board accessible to anyone with a computer and modem, was put on line in Fall 1994. Users can access various TURA data and program information, a list of upcoming events and important regulatory deadlines, and leave messages for OTA staff and other users of the system. (Phone # 617-727-5621)

- OTA began writing a monthly column about toxics use reduction opportunities for *Manufacturers' Mart.* The column is written by technical staff and focuses on specific TUR strategies or technologies.

- OTA staff wrote articles about Clean Air Act compliance and TUR options published in *Manufacturers' Mart*; about capital budgeting for TUR options published in *Pollution Prevention Review*; various articles about OTA projects and programs for newsletters for TURI, NEWMOA and others.

Partnering to Promote TUR

OTA staff collaborated with state, federal and municipal agencies, environmental non-profits organizations, trade associations, business groups and individual businesses on events and special projects to promote TUR. Some highlights:

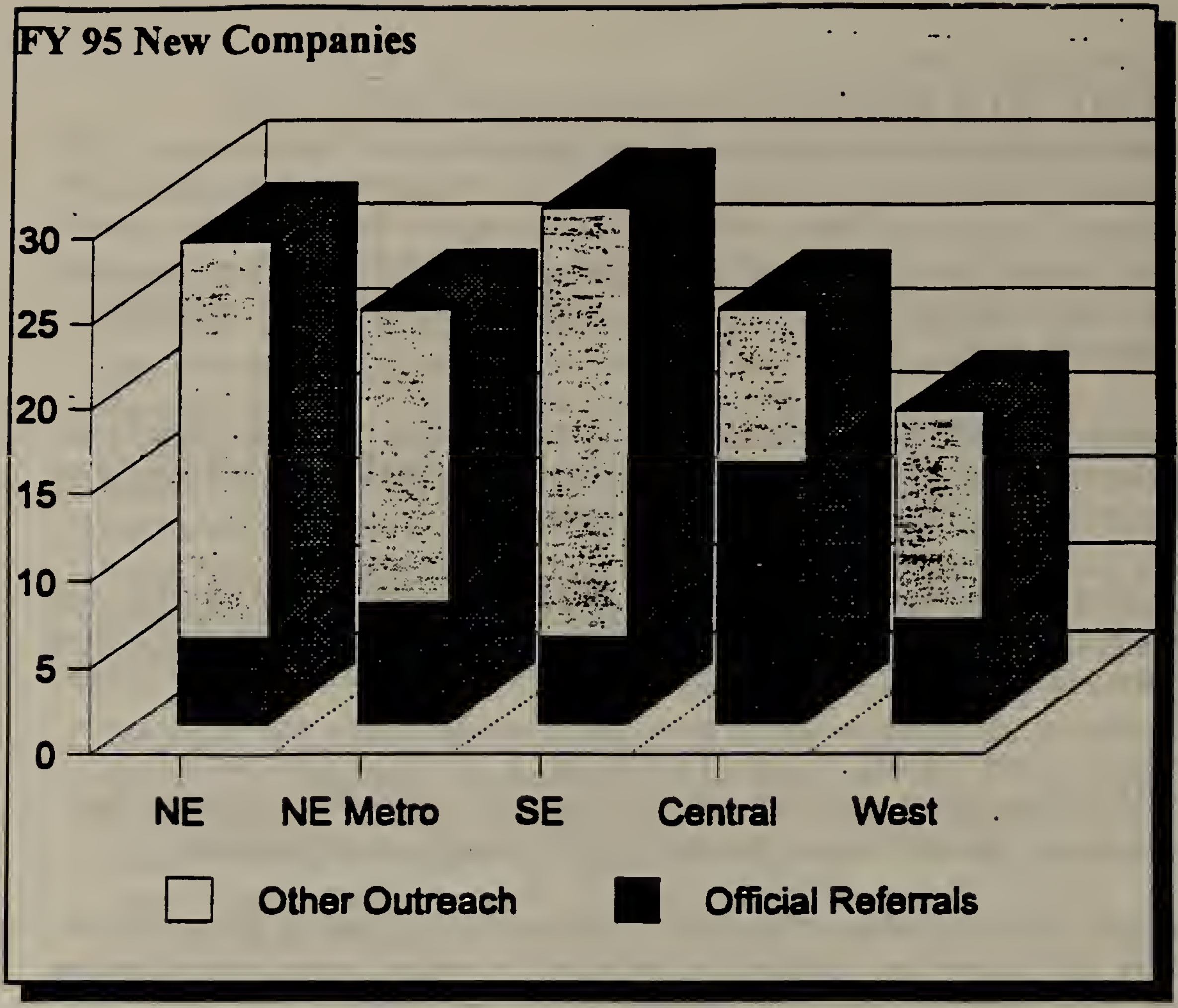
- As part of the Small Business Assistance Program (SBAP), OTA held a workshop for trade associations from various industries to enlist their help in educating small businesses about compliance with the federal Clean Air Act Amendments and how TUR can help reduce regulatory obligations. This workshop was part of the broader SBAP efforts, which also included collaborating with EPA - New England to provide several Massachusetts downlink sites for national teleconferences about the Clean Air Act requirements and TUR options for dry cleaning and vapor degreasing operations.

- Working with the Northeast Business Environmental Network (NBEN), OTA played a leading role in organizing a Regulatory Improvement Opportunities forum that attracted more than 100 participants from industry and government. The half-day session resulted in a list of issues identified jointly by businesses and government officials where there are opportunities for practical, common-sense changes.

  Working groups of both business people and government officials are being established to try to move forward with some of the suggested changes. The effort received funding from EPA - New England, and staff support from DEP, TURI, EPA-New England, NBEN member companies and the New Hampshire Dept. of Environmental Services.

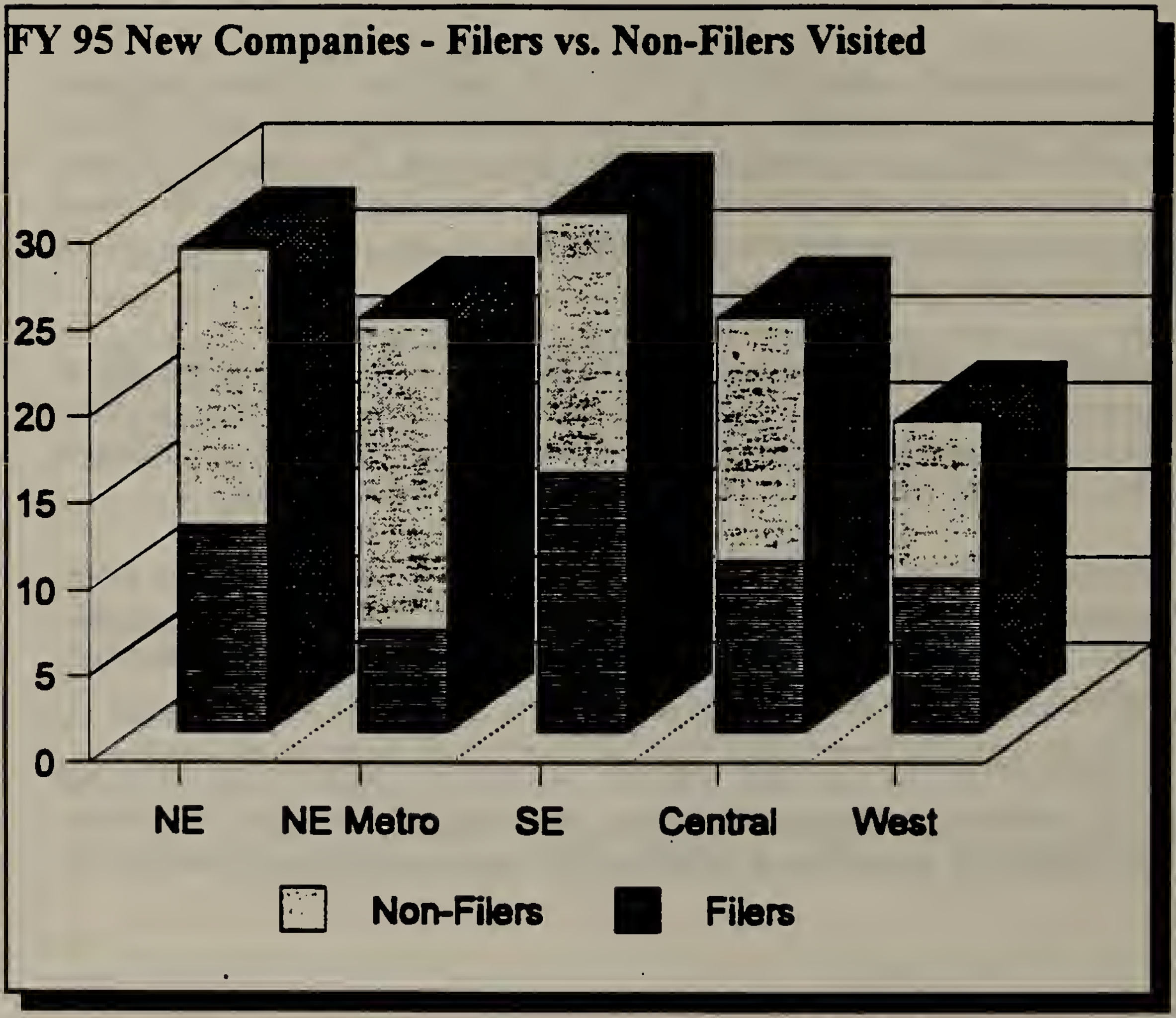
- In conjunction with the Northeast Waste Management Officials' Association (NEWMOA), OTA led workshops on capital budgeting methods for environmental projects, particularly TUR projects. In addition, OTA worked with EPA and NEWMOA to produce a guidebook of various options and methods for

Figure 1


FY 95 New Companies

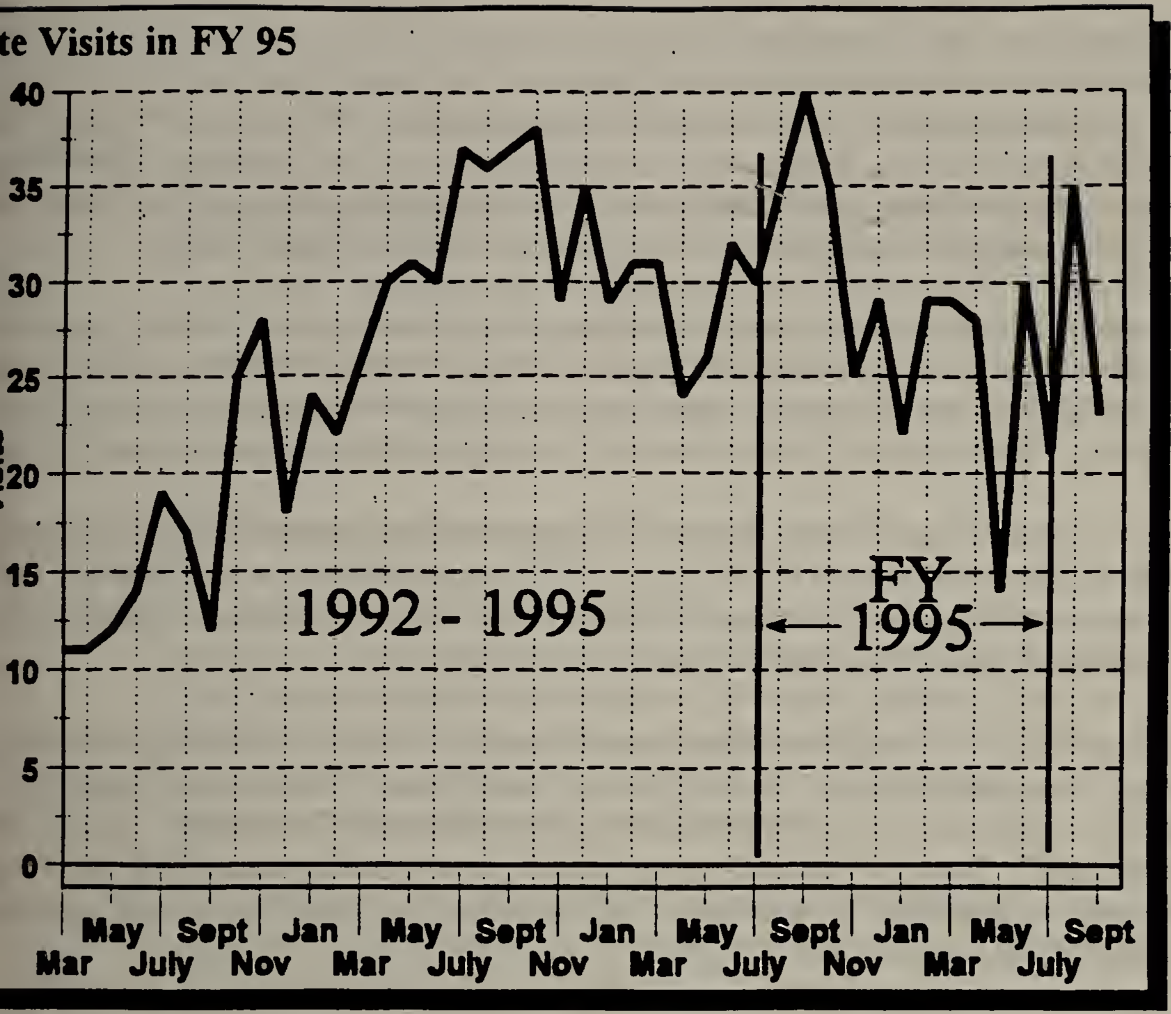
Sources of Referrals

- North East
  - 3 - DEP
  - 2 - POTW
  - 1 - Health Dept.
- North East Metro
  - 2 - DEP
  - 6 - POTW
  - 3 - Health Dept.
- South East
  - 5 - DEP
  - 1 - Town Mgr.
- Central
  - 14- DEP
  - 1 - Atty. General
- West
  - 6 - DEP
  - 1 - Chamber of C.
  - 1 - MOBD


FY 95 New Companies - Filers vs. Non-Filers Visited

Of the new companies OTA visited in FY 95, 58% are Non Filers. This is a higher percentage than in the past tw years, when the split was approximately 50/50. The increase may be due to the number of smaller companies being brought in under the ne Clean Air Act provisions.

Figure 2

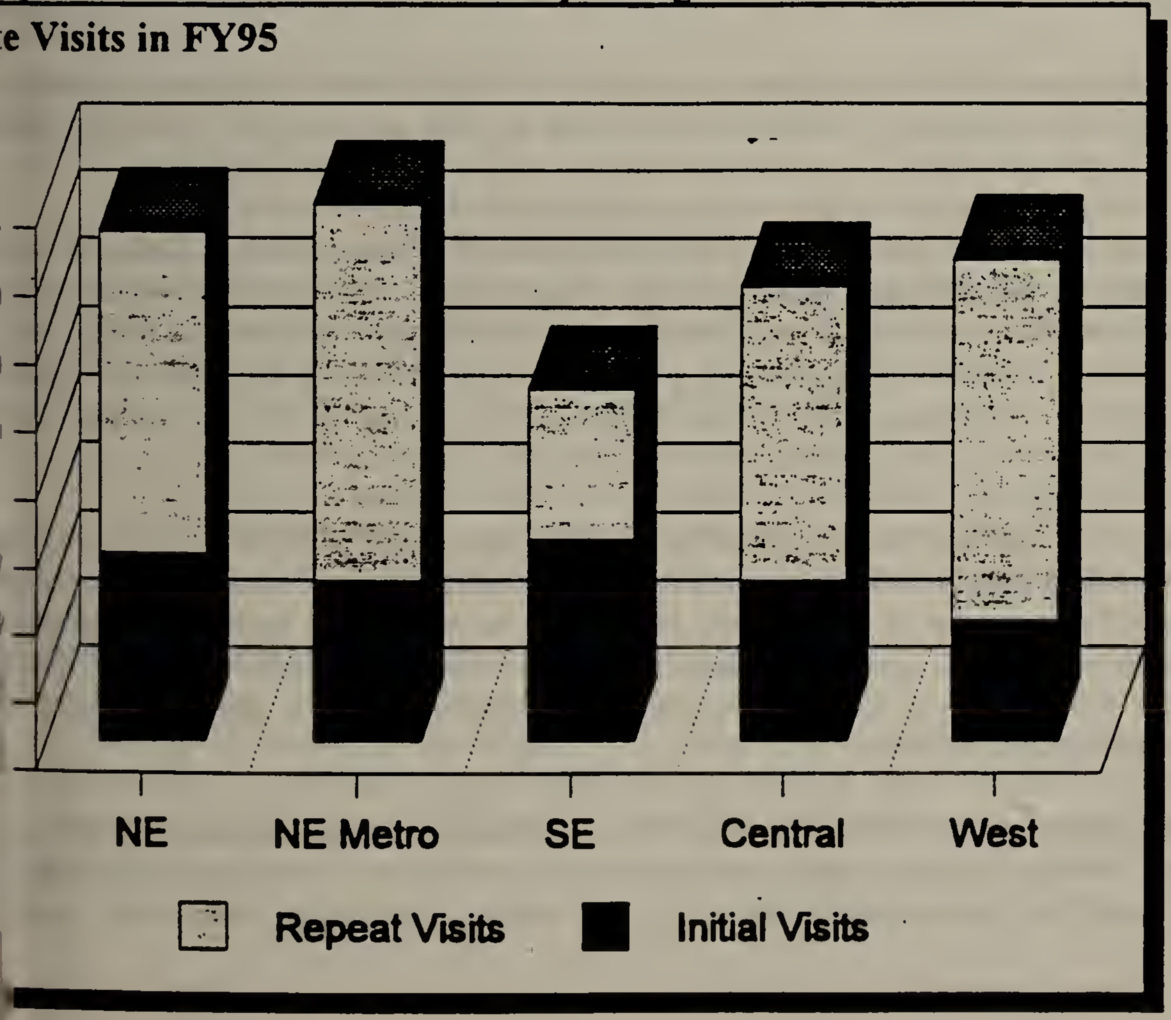


There were 344 site visits in FY 95. Of those visits, 124 were to new companies. As the graph shows, the average number of visits has decreased from last year. This is due in part to the fact 1995 was an "off year;" TURA plans were due last year and the updates will be due next year.

The focus on many of the visits is shifting to the air program. The number of visits was consistent by region. The break down is:

North East	75
North East Metro	79
South East	52
Central	67
Western	71

e graph below shows the number of new companies (initial visits) in relation to the number of total its. The ratio can be a little misleading since OTA is starting to get requests for return visits from mpanies first visited two and three years ago.



financing TUR projects.

- Also working with the Northeast Business Environmental Network and DEP, OTA sponsored a one-day conference called "Reducing the Risk: A Conference for Companies That Use Hazardous Materials." Presentations included industry, government officials, consultants and academics discussing the value and methods of using TUR as a means of reducing a variety of risks in manufacturing operations.

- OTA staff are active members of the MWRA Mercury Workgroup which is working to develop innovative approaches to finding sources of mercury in wastewater streams and opportunities to reduce those sources. They are involved in writing the source reduction techniques section of the guidance document being developed by the workgroup. Hospitals and other medical facility sources of mercury are a primary focus.

- OTA worked with CZM's Buzzards Bay Pollution Prevention Project to educate businesses in the Buzzards Bay region about pollution prevention. As part of this project, OTA helped organize a workshop on TUR opportunities for marina operators, an "Environmental Awareness Day" for the business community and general public, and a TUR workshop for auto and autobody repair shops.

- OTA collaborated with Bay State Skills Corp., the Massachusetts Manufacturing Partnership, TURI and DEP on a successful proposal for a project titled "Better, Faster, Cheaper, *and Cleaner* Manufacturing in Massachusetts." Funded by a grant from the National Institute of Standards and Technology (NIST), this two-year project will begin in FY '96, and will involve cross-training among the agencies, joint site visits and company projects, and development of information packets. The electronics and metal working industries will be the focus of the project.

- OTA staff membership in the American Society of Quality Control was instrumental in getting that organization to establish a Pollution Prevention and Waste Minimization Committee. OTA staff now chairs this national committee.

Federal Grants

OTA has enjoyed a high rate of success in receiving federal support for specific toxics use reduction projects, allowing the Office to expand its work and reach a wider audience, and to work cooperatively with EPA-New England staff.

- TUR in Schools: In FY 95, OTA received a $60,000 EPA grant to educate public schools in TUR techniques aimed at reducing the potential health risks from using chemicals. OTA's services include sponsoring workshops for teachers, custodians and administrative staff on the topics of lab safety, TUR techniques, indoor air quality problems and potential solutions. OTA performed TUR and air quality assessments during site visits to 16 schools, and provided follow-up assistance with five return visits. This work is continuing in FY 96.

- Clean State Grant: Mandated by Governor Weld's Executive Order Number 350 in 1993, this effort to help all state agencies comply with environmental laws and develop Pollution Prevention/Resource Conservation Plans was boosted by OTA's receipt of a $100,000 EPA grant to establish a multimedia pollution prevention/resource conservation team. The team includes representatives from OTA, DEP, the Department of Public Health (DPH), the Division of Capital Planning and Operations (DCPO), and the Division of Procurement and General Services (DPGS).

  During FY 95, the multi-agency team visited 25 representative state facilities including hospitals, colleges and universities, parks, swimming pools, administrative offices, correctional institutions, and MBTA facilities. The team looked for opportunities for energy and water conservation; solid waste source reduction, recycling and reuse; improved hazardous waste management and TUR; and "green" procurement practices. A report on the overall findings and recommendations for future actions will be presented to the Clean State Council during FY 96.

- The Merrimack Project: OTA completed its work and published a report on The Merrimack Project, a four-year, EPA-funded project focusing on industrial pollution prevention in the Merrimack River watershed. The project included work directly with businesses, with POTWs and with regulatory agencies as a means of educating industry about toxics use reduction. As previously reported, a telephone survey of companies which OTA assisted over the life of this project found that 10 companies together eliminated nearly 1.7 million pounds of toxic pollutants, and 18 companies saved $1.85 million by implementing P2 strategies recommended by OTA.

  The Merrimack Project's legacies include:

  - improved communication with DEP and the EPA. As a result of this project, both agencies have an improved understanding of the role of nonregulatory technical assistance as complementary to their compliance and enforcement efforts. EPA-New England's final report says The Merrimack Project "has verified that pollution prevention technical assistance is an effective tool for encouraging and achieving environmental compliance," and credits the project for providing a model for the recent restructuring there that places an emphasis on technical assistance.

  - improved communication and cooperation with POTWs, who now routinely refer companies to OTA for technical assistance and many of whom have incorporated TUR programs into their own regulatory regimes.

  - formation of the Northeast Business Environmental Network (NBEN), a model nonprofit, nonpartisan organization of businesses, government agencies and environmental advocates who advance pollution prevention as the preferred method of environmental protection and economic gain. With the support of grant funding, OTA staff served as staff to the group; the group is now continuing to function on its own with grant support from Bay State Skills Corp. and has hired its own administrator.

  A full report entitled "The Merrimack Project", is available from OTA.

- Critical Parameters: OTA completed work on a four-year project to show how pollution prevention approaches can be incorporated into programs for treating different problematic discharges at publicly owned treatment works (POTWs). The grant was directed at POTWs experiencing or about to experience problems with exceeding permit levels for specific parameters. Pollution prevention strategies and education efforts were used in work with residential sources in Worcester, an industrial discharger in Warren, and nonpoint sources in Springfield.

  A full report titled "The Critical Parameters Project Final Report," available from OTA, describes the efforts in detail. In addition, many of the education materials prepared as part of this project (including a video on how POTWs work, a consumers' guide on TUR strategies at home, and a grade school curriculum) have been widely distributed by OTA and copies continue to be available to the public.

Promoting TUR through Policy Initiatives

OTA's role in promoting the incorporation of toxics use reduction in policy has grown through the years for two reasons: first, in response to problems staff have identified during their on-site work with companies and second, in response to requests for OTA to share its experience in pollution prevention and its connections to the regulated population.

The Office mission includes assisting toxics users "in complying with the requirements of this chapter (TURA) and the laws and regulations" pertaining to chemical use. As a result, OTA has sent numerous queries to regulatory agencies asking for clarification of rules regarding hazardous waste, wastewater discharges, air emissions, and occupational exposure. Companies wary of directly asking an enforcement agency for clarification of its requirements have often chosen to resolve questions through OTA. OTA staff also have identified regulations intended to promote environmental progress that have instead created obstacles for companies implementing environmentally preferable activities.

OTA has served as the advocate for incorporating pollution prevention in:

- the formation of the state's watershed planning policies
- the state's programs for promoting the development of innovative environmental technologies
- the state's programs for addressing residential pollution and household hazardous waste
- state and local programs addressing wastewater discharges.

Highlights of other specific policy work in FY 95 include:

- OTA assisted the DEP and the Attorney General's office in structuring enforcement actions to favor toxics use reduction over treatment and control options. The AG's office has written consent orders that provide incentives for TUR, and DEP has worked with OTA on several specific cases, in addition to soliciting and receiving comments on how it should structure penalties, permits, inspections, and other interactions with the regulated community.

- OTA's role in helping DEP structure policy changes toward the preventive approach was formalized this year by an invitation to participate in policy committees under DEP's Office of Policy Integration (OPI). OTA staff were included in each OPI committee, and have made comments on a number of policy issues through this new venue. An example of work product of this new arrangement was a recent joint visit of DEP and OTA to EPA New England, where the two agencies together argued for EPA to allow the state to structure an air program exemption intended to promote the use of aqueous cleaners in place of more toxic solvent cleaners. Other examples have concerned changes to promote zero wastewater discharge systems, changes to promote use of lower air polluting chemicals by printers, and use of penalty mitigations to reward those who choose pollution prevention for their remediation approach.

- OTA helped the Northeast Waste Management Association (NEWMOA) design training for state enforcement staff in incorporating pollution prevention in permitting programs. OTA staff conducted training for DEP permit writers, using real examples of language culled from a review of hundreds of permits.

- OTA has been a key participant in the development of DEP's Printers' Partnership, an initiative to pioneer regulatory innovation. The aim of the Printers' Partnership is to replace time-consuming and difficult permit authorizations with a system of self-certification, a model which is being used for much wider application within the state and in other jurisdictions. The project will be the first to road-test many new concepts intended to bring a greater efficiency to environmental regulation, and remove unnecessary obstacles to responsible operations.

- OTA's role as coordinator of the Small Business Assistance Program (mandated by the Clean Air Act Amendments, although not funded) has given rise to an effort to promote greater coordination of policy by the various agencies concerned with air regulatory issues. OTA staff initiated an Air Policy Integration Group (AIRPIG), leading to greater communications between DEP, EPA, EOEA, and OTA.

- The U.S. Environmental Protection Agency has frequently asked OTA for input on policy development, and since its establishment OTA has been a regular member of EPA's regional Pollution Prevention Task Force, the primary policy development and review body in this area. In FY 95, OTA participated in several planning meetings at the New England regional office resulting in the formation of EPA New England's Environmental Assistance Team (the NEEATeam). EPA officials have publicly stated that the regional office's attempt to develop an assistance capability is a result of noting the success of OTA's programs! OTA also assisted in the development of plans for programs to recognize environmentally responsible businesses, now formalized as the Environmental Leadership Program.

- On a national level, OTA participated in the formation of a Common Sense Initiative for the electronics industry. OTA's Assistant Director for Policy and Outreach was recommended to EPA for this committee by business representatives, and has become a national workgroup chair.

- OTA's financial analyst, after writing an article on capital budgeting for pollution prevention that appeared in a prominent national journal, has been consulted by national and international experts and government officials. His advice, to focus on how corporate managers make decisions, has enriched the new area of environmental finance and expanded the focus beyond reforms in accounting systems.

- OTA's Clean State work has resulted in a number of policy recommendations for state agencies, to ensure that use of safer products is encouraged by purchasing procedures, to ensure that employees are given the authority to address environmental issues, and to ensure that financial incentives are in place for agencies to act.

Promoting TUR through Innovative Technology

- OTA staff is providing key input to the Strategic Envirotechnology Partnership (STEP) through technical review and assessment of emerging innovative environmental technologies and services. This effort includes participating in the activities associated with demonstrations of new technologies, e.g, identifying demonstration sites and developing demonstration guidelines and experimental protocols.

- In order to promote the development and more widespread use of TUR techniques, OTA staff has begun working more closely with EOEA staff and TURI to identify problems facing industry that require fundamental research or technology development. This has resulted in a variety of research projects that are being conducted at both TURI and the National Envirotechnology for Waste Prevention Institute (NETI) at University of Massachusetts, Amherst. OTA's field work with companies statewide provides valuable information for this process.

- OTA sponsored a one-day conference called "Solventless Coating with Electron Beam Technology," for web coaters of paper, textiles and plastics. Web coaters traditionally are larger emitters of VOCs, and this technology eliminates the use of solvents and thus VOC emissions. As a direct result of this conference, three Massachusetts companies have begun feasibility studies of the applicability of electron beam technology to their products and processes.

- OTA staff developed a software program to help coating operations calculate their VOC emissions for state reporting requirements under the Clean Air Act, and designed a spreadsheet for use by solvent degreasing operations to assist with recordkeeping and compliance calculations for EPA air standards.

- OTA staff worked in cooperation with the state Division of Energy Resources to assist companies applying for federal EPA/DOE NICE3 grants. OTA's role has been to participate in preliminary review and selection of projects, and assist selected companies in preparing grant applications. OTA staff continues to provide technical supervision for the region's first NICE3 award to Erving Paper Mills in Erving, Massachusetts.

OTA FISCAL YEAR 1996 STRATEGIC PLAN

Over the course of the next fiscal year, OTA will continue work on many of the projects discussed above. Particular emphasis will be placed on projects that lead toward integrating TUR into mainstream business practices. showing the economic benefits of TUR, and influencing the regulatory development/streamlining process in a sensible way that achieves true environmental protection.

FY 96 OTA Workplan:

Under the Toxics Use Reduction Act, the primary responsibilities of the Office of Technical Assistance are:

- to provide technical assistance to toxics users to assist them in achieving toxics use reduction and in complying with the requirements of TURA and other environmental laws and regulations;
- to engage in an outreach program to small businesses required to report and plan under TURA and assist first-time filers with reporting requirements and trade secret submissions; and
- to coordinate, whenever feasible, with private sector initiatives in toxics use reduction and waste prevention education and technical assistance.

For several years, the main focus of OTA's work was aimed at helping companies to understand what TUR meant in terms of their operations and to comply with TURA's reporting and planning requirements. Now that the initial deadlines are past, more attention can be paid to integrating TUR into general business practices, policy and regulation development aimed at encouraging reductions, and transfer of information and technology that address specific environmental problems identified through field work or analysis of the TURA data.

Based on these shifting priorities, OTA's strategic plan for FY 96 includes a greater emphasis on partnering with other agencies and programs, significant resources devoted to policy development and review both with DEP and EPA, identification of technology needs and dissemination of information on new technologies, and expanded efforts to quantify the environmental and economic results of TURA.

The components of OTA's FY96 program include:

Partnering with public and private agencies and programs to coordinate and integrate Toxics Use Reduction and OTA's services into as many areas as possible.

- Better, Faster, Cheaper and Cleaner Manufacturing in Massachusetts - a collaborative effort of OTA, TURI, DEP and the Massachusetts Manufacturing Partnership, a National Institute for Science and Technology (NIST) sponsored Manufacturing Extension Program (MEP) affiliate, focusing on more competitive and cleaner processes and products in the metal products and electronics industries. This project will coordinate the broad range of expertise and services of the participating agencies, providing one-stop assistance to small and medium-size companies (under 500 employees) which make up much of the manufacturing base in Massachusetts. Activities in the first year of this two-year project include:
    - a series of cross agency training sessions to acquaint staff of the various agencies with expertise and approach of each
    - 4 industry-specific workshops for the electronics and metal products industries
    - 28 joint site visits by MMP and OTA staff
    - evaluation and field testing of nationally developed tools for environmental benchmarking and technology assessment

- Massachusetts Printer Partnership - a pilot project for the printing industry to streamline permitting requirements and best management practice guidelines combining environmental protection and simplicity of compliance. OTA is collaborating with DEP and Printing Industries of New England (PINE) in the

following areas:
  - development of a self-certification document and workbook
  - development of all other program materials including brochures, list of frequently asked questions and answers for DEP and OTA field staff
  - presentation of 6 workshops for printing industry
  - organize 5 regional clinics to provide one-on-one assistance to printers with program requirements
  - assist with review and analysis of program
  - provide on-site technical assistance as needed

- EOEA's Watershed Initiative - an effort to promote resource protection and environmental planning on a watershed basis. OTA's involvement includes:
  - participation on the Watershed Initiative Steering Committee
  - participation by regional teams in the work of the various Basin Teams
  - promotion of pollution prevention as a component of watershed protection
  - outreach to watershed associations and industry within the basin through workshops and articles

- Environmental Leadership Program - an EPA sponsored program to recognize companies going beyond compliance, showing a high degree of environmental responsibility and demonstrating a willingness to share what they have learned with others. EPA and DEP have requested OTA's assistance in the following areas:
  - review and comment on companies' self-audit protocols
  - review workplans for companies taking part in the "mentoring" program for smaller companies
  - work with companies to address quality control, process/compliance issues, liability
  - work with mentoring companies at the request of EPA, to organize and publicize workshops for industry sectors covered and provide review of material to be presented

Assist with encouragement of emerging technologies and transfer of existing technology

- STEP Program: a new state initiative to promote the development and use of new environmental and energy-efficiency technologies, with primary focus on pollution prevention:
  - assist with review and assessment of emerging technologies
  - identify demonstration sites for new technologies
  - assist STEP with demonstration monitoring

- Identify problems which need research or technology development through field work:
  - provide input to STEP and its related University of Massachusetts Centers such as the National Environmental Technology for Waste Prevention Institute (NETI), and to TURI on problems which need solutions or research on applied technologies
  - assist with review process
  - work with the Concurrent Technology Center, a federally funded Center for Excellence in Johnstown, PA, to match technical services with needs of Massachusetts companies where applicable

- Encourage transfer of technologies which meet the needs of Massachusetts industry through conferences, workshops, development of case studies, and the initiation of an industry sector advisory service:
  - hold conference on Ultra-Violet Curing in May, 1996
  - present workshops on cleaning technologies
  - identify OTA industry sector experts who can act as technical advisors to trade associations and to individual companies, as well as TUR Planners
  - work with TURI to address alternative cleaning technologies based on survey results

Provide on-site technical assistance in response to requests resulting from outreach activities and referrals from regulatory and other official sources

- Provide immediate assistance to regulatory referrals from DEP, EPA, POTWs, Attorney General's Office and other official sources such as health agents and fire departments
- Respond to requests for assistance from TURA filers and small businesses not required to report
- Participate in joint visits with regional MMP staff
- Assist printers with self-certification and pollution prevention information as part of the Printers Project
- Conduct follow-up visits to document progress, identify TUR success stories, quantify results where possible or identify issues which are barriers to progress.
- Continue to assist communities in the development of household hazardous waste programs and respond to requests from households

Conduct outreach activities to generate clients for technical assistance, transfer technology, provide regulatory information, address policy issues, support the work of TUR Planners and enhance their opportunities to receive continuing education necessary for recertification

- Hold workshops for the printing, electronics and metal industries as part of joint projects with DEP and MMP
- Hold workshops for new TURA filers (number to be determined by number and distribution of new filers)
- Hold 5 regional workshops on updating plans for July 1,1996 deadline
- Broadcast national teleconference(s) on new Clean Air Act standards at multiple locations
- Hold statewide conference on radiation curing technology
- Hold workshop/conference on relationship between TURA and ISO 14001
- Work with TURI and TUR Planners' Association to identify opportunities and topics for continuing education credits
- Hold workshops for NICE3 grant potential participants

Develop and distribute information on toxics use reduction

- Publish booklet of case studies
- Develop additional case studies
- Write a monthly article for Manufacturers Mart
- Develop articles for relevant publications
- Develop industry or process specific information as needed

- Publicize and expand content of OTA bulletin board
- Initiate Internet web site to expanded pollution prevention information exchange

Offer finance technical assistance and other resources to assist companies increase competitiveness by identifying and capitalizing on opportunities that TUR and TUR Planning open up in instituting Total Quality Management (TQM), in accessing green markets and in preparing for certification under voluntary quality and environmental commerce standards such as British 7750, ISO 9000 and ISO 14001

- Continue to analyze the TUR fee waiver requests and make recommendations to the Secretary for action
- Offer TUR financial workshops for Financing Institutions as well as businesses and TUR Planners, as needed
- Continue working with MIFA and begin investigating other potential resources for funding TUR projects and looking for potential areas of cooperation with other state and federal programs
- Provide on-site assistance to companies to assist with evaluation of costs and savings of proposed P2 projects
- Develop case studies when applicable, documenting the success of TUR in helping companies identify and access new green markets, or to continuing in markets with more stringent environmental standards, such as those demanding the elimination of ozone depleting chemicals in the manufacturing process of products or certification under ISO 9000 or 14001
- Identify the overlap between TUR Planning requirements and existing and proposed voluntary commerce standards
- Support TUR Planner's efforts to promote TUR Planning as a step towards accessing and promoting green markets, achieving compliance with the existing and proposed voluntary commerce standards, and the implementation of Total Quality Management (TQM)

Continue cross-agency coordination on policy development, regulatory review and training

- Participate in interagency policy development workgroups
    - EPA Common Sense Initiative, Washington - electronics
    - EPA/ New England Common Sense Initiative - metalworking
    - OPI/DEP weekly meetings
    - EOEA/DEP/OTA household hazardous waste policy and information development group
    - MWRA/TRAC Advisory Board and MWRA mercury study workgroup
    - NEWMOA information access group
    - DEP plan update and user segment groups
    - TURA Coordinators group, research needs group and evaluation group
    - POTW Pretreatment Forum
    - National Pollution Prevention Roundtable
    - EOEA Watershed Steering Committee
- Regulatory Review
    - Review and comment on TURA and other state and federal regulations as needed

- Training
    - Provide internal training on regulatory issues, ISO 14001, presentation and writing skills, other topics as identified
    - Continue OTA/DEP cross training sessions on a regular basis
    - Participate in cross training sessions with MMP, DEP and TURI as part of joint project to promote Better, Faster, Cheaper and Cleaner manufacturing in Massachusetts
    - Provide training on toxics use reduction to regulatory personnel at the local, state, regional and federal level as requested

Participate in evaluation of TURA progress and effectiveness

- Continue to work with DEP and TURI to identify, collect and analyze data and information relating to progress toward statewide TURA goals
    - Assess TURA data for trends in chemical use, BRIs, ERIs
    - Conduct extensive follow-up with companies to document progress, quantify reductions and costs, benefits
    - Participate in discussions on evaluation of progress with EPA, NEWMOA, and the National Pollution Prevention Roundtable to address the question of measuring progress so that there will be consistency in reporting and the interpretation of results

Assist EOEA Clean State Coordinator with implementation of Executive Order 350

- Make recommendations to Clean State Council based on the results of the EPA funded Clean State grant project completed in FY95

- Assist with a year long series of monthly workshops for state agencies to address pollution prevention and resource conservation issues identified through a survey of agencies and observations made during the 25 site visits completed in FY95

Fulfill on-going EPA grant obligations

- Technical assistance to educational institutions to look at chemical use and management and indoor air quality issues

- Technical assistance to schools in low income areas with associated outreach to the community

- EPA/DOE NICE3 grant (in cooperation with DOER) - provide oversight of technical activities associated with grant

- Buzzards Bay Project (in cooperation with CZM) - assist with planning and participate in pollution prevention outreach to the business community

TURI: THE MASSACHUSETTS TOXICS USE REDUCTION INSTITUTE
FISCAL YEAR 1995 ACCOMPLISHMENTS

TURA created the Toxics Use Reduction Institute at the University of Massachusetts Lowell as a multidisciplinary research, education and policy center to accomplish nine mandates which fall within five broad missions:

- to develop educational materials and programs on TUR for the public and businesses;
- to provide technical support services to the other TURA agencies and consultative services to other state agencies;
- to develop and provide curriculum and training for higher education students and faculty of toxics use reduction;
- to engage in research, development and demonstration of innovative TUR methods; and
- to develop a TUR Planners training program.

Under TURA, the Institute was given the responsibility to host and consult with the Science Advisory Board (SAB) on listing and delisting of reportable chemicals, and has, at the request of the Administrative Council, spearheaded an effort to fully evaluate the success and impact of the entire TURA Program.

The Institute continues to meet all its statutory deadlines and to develop and deliver innovative services well beyond those mandated. Highlights of the FY 1995 work in these areas are summarized below.

Science Advisory Board

The Science Advisory Board became fully operational in FY 95. The eleven-member Board, consisting of scientists, engineers, and citizens selected for staggered three-year terms, met once a month during the year and began considering petitions to list or de-list chemicals. The Board recommended the de-listing of five metals (copper, nickel, chromium, cobalt, and manganese) when contained in an alloy form but not including aerosols of the alloy. This recommendation was forwarded by TURI to the Administrative Council, and was approved.

Toxics Use Reduction Act Program Evaluation

The four agencies of the Toxics Use Reduction program have agreed to jointly administer a TURA program evaluation to begin in FY 95 and end in FY 99. The evaluation is being spearheaded by the Toxics Use Reduction Institute. The goals of the TURA program evaluation are:

- to fulfill the law's requirement that the program assess itself against Goal 1 of the Toxics Use Reduction Act: a 50% reduction in toxic waste through toxics use reduction by the year 1997;
- to measure and assess the program's performance on Goals 2-6 of the Act and other dimensions of the TURA program;
- to inform the public and the Massachusetts Legislature about the effectiveness of the TURA program; and
- to enable program improvements based on evaluation data.

The TURA program evaluation is being administered by a special TURA program evaluation committee made up of two members from each of the TURA administrative agencies. The program evaluation committee is obtaining advice and assistance from a multi-stakeholder consultation group. The consultation group, which has been convened three times as of this writing, includes representatives from the TURA Advisory Board, TURA filers, environmental organizations, and individuals expert in the field of program evaluation. Representatives from the TURA Advisory Board are responsible for keeping the Board informed on program evaluation progress. The consultation group will continue to work closely with the program evaluation committee on the design and implementation of the evaluation. The evaluation committee plans to hold periodic public meetings to present the design of the evaluation, the draft interim report, and the draft final report to solicit public input and assistance. The TURA program evaluation will include a series of components. These include:

- A mandates fulfillment analysis - an assessment of whether the TURA agencies have fulfilled the specific mandates contained in the Act

- A TURA data validation and analysis - an in-depth look at the TURA data including the construction of the 1987 baseline, trend and sectoral analysis, and data normalization. With the completion of the 1997 data, the Program Evaluation Committee will conduct the assessment of the program's performance against the goal of 50% reduction in toxic waste by the year 1997 (Goal 1 of the Act).

- A Large Quantity Toxics User Survey - a survey of a sample of participating firms is planned for FY96. This survey will be designed and implemented by a private consultant collaborating with the program evaluation committee. The goal of the survey is to obtain information, not otherwise available from "Form S" and other existing sources of data, that would contribute to the program evaluation.

Promoting TUR through Research

The Institute sponsors and conducts research in three areas: new technologies and materials, analytic and planning methods and policy. The research activities are overseen by members of the Institute's Research Cluster. Activities during FY 95 included:

- The Industry Matching Grants program awarded matching grants totalling $35,000 to three Massachusetts industries. The grants supported research into electrodialysis for integral recycling of electroless nickel plating baths, in-process reclamation of nitric acid from solder strip, and integrating design for the environment and TUR principles into the R&D process.

- Four students were awarded TURI Research Fellowships for the 1994/95 academic year. The research topics funded were in the areas of no-clean soldering, the use of supercritical fluids as solvent substitutes, the application of TUR approaches to OSHA policy, and an impact analysis of chemical bans.

- The Surface Cleaning Laboratory, located at TURI, offers direct hands-on research and testing opportunities to Massachusetts industries to evaluate the effectiveness of different aqueous-based cleaning chemistries and equipment on a variety of substrates and soils. The laboratory commenced full-scale operation in FY 95. A permanent, full-time laboratory manager was hired. Twenty-five firms used the services of the laboratory in FY 95; this number is expected to double in the coming year.

- The Research Cluster published six technical reports and three methods and policy reports during FY 95. In addition, a specially mandated report on chemical restrictions, "Toxic Chemical Management in Massachusetts: the Second Report on Further Chemical Restriction Policies," was published in January 1995. This report was widely reviewed and the subject of special public hearings held in Boston and Springfield.

- TURI received funding from the federal Environmental Protection Agency to explore methods for evaluating pollution prevention progress and to measure TUR progress in Massachusetts. A joint TURI, OTA, and DEP team was established to collect, organize, and analyze data, and a final report is scheduled for November 1995.

- The Institute continued its Clean Alternatives Project which is a an Environmental Protection Agency funded cooperative agreement to evaluate alternatives to "33/50" solvents used in metal degreasing operations. Three Massachusetts companies were selected for study; for each company, cleaning alternatives were identified and technical, economic, and health impacts were evaluated. A final report is due in December 1995.

- In collaboration with engineering faculty from University of Massachusetts Lowell, University of Vermont and the University of New Hampshire, TURI is developing a book of quantitative homework problems for engineering subjects that illustrate toxics use reduction. These homework problems can be incorporated into almost all major engineering disciplines, including chemical engineering, civil/environment engineering, mechanical and materials processing engineering and industrial engineering. When complete, the problem book will be distributed to colleges and universities across Massachusetts. This project is being funded by a grant from the Pollution Prevention Consortium of New England Universities.

Technical Support for Toxics Use Reduction

The Institute carries out a series of initiatives to provide technical support to firms implementing toxics use reduction programs, the collaborating TURA agencies and other stakeholders who support and encourage TUR. This work is carried out through the Technical Support Cluster and the Technical Transfer Center. Programs carried out during FY 95 include:

- The Technical Support and Research clusters at TURI, in collaboration with the Merrimack Valley Manufacturing Partnership (MVMP) sponsored a workshop called "The Metal Cleaning Challenge" on April 27th, 1995. MVMP, a regional center of the National Institute for Science and Technology (NIST) sponsored Manufacturing Extension Program, works with several industry sectors in Northeast Massachusetts to help firms improve their competitiveness. This workshop presented case studies from several companies, that have implemented TUR options independently or with the help of TURI's Surface Cleaning Lab. There was also be a presentation on the Lab and the services it provides.

- TURI received a grant from the USEPA's Design for Environment program to work in conjunction with a similarly funded demonstration project managed by the Center for Neighborhood Technology in Chicago. The grant funds the development of a curriculum and training manual for garment wet cleaning (alternatives to perchloroethylene dry cleaning). Work is already underway. The course will be piloted in the Spring.

- The Technology Transfer Center:

  The Technology Transfer Center (TTC) made significant progress in FY 95. Close to 1,500 new documents and books were added to the library , and 750 inquiries or visitors were provided with information and reprints. Over 2,600 original Institute publications were disseminated. The library now houses over 15,000 publications, a third of which are abstracted in an electronically searchable database. Comments from Massachusetts users and interest from other Pollution Prevention and clean technology programs in the United States and other countries suggest that this is a unique and very valuable resource in support of technology transfer and industrial transformation.

  The TTC also worked with other New England organizations to create regional P2 information resources. The Center has contributed to the creation of a regional database of materials in Northeast P2 clearinghouses, and will work through fiscal year 1996 with the Northeast States P2 Roundtable to pilot other mechanisms for disseminating information to local businesses, government and citizens. The TTC also participated in national projects to better share information between states clearinghouses.

  Businesses will be able to access pollution prevention information online and share information with each other over the Internet through an initiative of the TTC in partnership with the Northeast Business Environment Network (NBEN). The Center has created an interactive page on the Web (Internet) for this growing group or 35 businesses, and are providing an engineer/librarian to support this effort in fiscal 1996.

  An Internet tool called "P2Gems" is being completed, with a pilot due out in mid-November 1995. This keyword searchable directory connecting users with over 100 sources of information on the Internet, will be maintained and updated by the TTC.

The TURI information booth was present at New England Environmental Exposition, the New England Environmental Network Conference, and at the Lowell Business Fair. TTC staff have created panels or given presentations on the TURA program, TUR Planning and ISO 14001, and local initiatives using TUR data.

More focused service to the Massachusetts OTA was undertaken in FY 95, and a full copy of the bibliographic database was installed at the Boston office. Presentations, training and interactive interviews are mechanisms that are being used to improve services and connect with the many individuals that constitute this front line of the TURA program. The training project for Massachusetts Manufacturing Partnership field agents has a large information services portion. Activities to develop information tools and training materials will be specified with input from OTA. This project will also allow more complete and useful multidisciplinary treatment of the management and technology interface, and useful information products for the metal products and electronics industries will result.

The TTC initiated work to create a protocol for integrating the cross-disciplinary, iterative, multifaceted activities of the Institute and OTA that support innovation and adoption of TUR technologies in industry. The product is expected to be a valuable tool for managing and measuring the technology transfer efforts of the TURA program.

Education and Training in Toxics Use Reduction

The Institute designs and carries out educational and training programs to promote toxics use reduction at professional, college and secondary school level. The work is carried out by staff of the Education and Training Cluster. Specific TURI activities in this cluster include:

- The TUR Planner Curriculum was updated and edited extensively during the Summer of 1994. A professional editor rewrote the curriculum for clarity and tone and corrected and updated factual information as needed. Several chapter problems and exercises were updated. The LAMPWORKS case study was expanded and refined and is now presented in binder form with five distinct roles and corresponding data from which course participants work in teams to develop a TUR Plan.

- During FY 95 two sessions of the TUR Planner course were delivered involving professionals selected from private companies, industry and government agencies as adjunct instructors. A total of over 625 TUR Planners have been trained to date. The Institute delivered of a TUR Planners training course to DEP staff. The course enrolled 23 staff from the agency.

- In December of 1994 TURI held a TUR Planner Debriefing entitled "What Lessons Can We Learn From the First Round of TUR Plans?" The purpose of the event was to hold a facilitated discussion between TUR Planners who had certified plans the previous July. The objective was to draw on planner experiences to learn what did and did not make sense, from the TUR Planners point of view, in the first round of planning. Attendees discussed which activities were most or least useful, the rules and exceptions in the planning process, and recommendations the planners could make for strengthening the program. More than fifty planners participated in the debriefing and staff from TURI, OTA, DEP and the TURA Administrative Council attended to listen to the feedback from planners.

- A Survey of TUR Planners was conducted to target continuing education learning needs and over 183 responses were returned. This input was used in the planning of the Continuing Education Conference discussed below and the development of twenty relevant courses with input from the three TURA agencies.

- The Institute planned and convened a Toxics Use Reduction Planner Continuing Education Conference, offered in conjunction with DEP and OTA. Following the TUR Planner Debriefing, a call for papers and posters was sent to all certified TUR Planners for presentation at a two-day TUR Planner Continuing Education Conference. Over 45 proposals were submitted. A review committee representing TURI. DEP. OTA and industry TUR planners reviewed and selected the proposals for the conference. Over 350 people attended the two-day conference during which 21 new workshops and over a dozen poster presentations were delivered. Over 5300 continuing education units were awarded to TUR Planners based on completion of workshops at this conference. Using feedback from the TUR Planner Debriefings regarding the need for management commitment and education, a special breakfast event for TUR Planners and their managers or CEO's was offered and a management issues workshop track was scheduled for Day 1 of the conference.

- TURI Training and Education Staff participated, along with DEP training staff, in the curriculum design and delivery of a new 3-day course "The Skillful Change Agent: Promoting Pollution Prevention in Public Agencies". The training program pilot was developed under an EPA Region I grant to Tufts CEM and NEWMOA. The curriculum focuses on three essential skill sets for agents of change in any organization: teambuilding, problem solving and getting buy-in. TURI and DEP sponsored the delivery of the training to 30 TURA program staff.

- The Education and Training staff is working with Minuteman Vocational Technical School to develop a vocational education environmental technician program which is prevention oriented. TUR Planners have been surveyed to determine the appropriate skill base for a TUR Planning assistant environmental technician.

- Institute staff provided two half day TUR workshops for high school students and two half day TUR discussion sessions for high school teachers in conjunction with the University of Massachusetts Lowell and the Merrimac Summer Institute.

Administrative Cluster

The administrative work of the Institute is carried out by staff of the Administrative Cluster. During FY 95 this work was continued and expanded through the establishment of a new budgeting and expenditure tracking system that improved contracting and invoicing performance.

The Institute produced two editions of the program newsletter "TURA Reports" during FY 95. This newsletter is circulated to a mailing list of nearly 5,000 recipients throughout the Commonwealth. TURI also created a newsletter targeting TUR Planners in FY 95 and distributed copies to over 2,800 people on a quarterly basis.

TURI staff along with DEP and OTA staff also assisted the TURA Program Advisory Board in the solicitation, selection and awarding of the Governor's Awards in Toxics Use Reduction.

TURI: FISCAL YEAR 1996 STRATEGIC PLAN

Many of the efforts of the Institute in the early years were devoted to the initiation of the various TURA program elements such as the TUR Planning curriculum and training, the technology research program and the start up of the Technology Transfer Center and the Surface Cleaning Laboratory. As the Program elements have been established, TURI has begun to reach out in new directions, expanding the areas of education and outreach. In FY 96, TURI will increase these efforts to reach and link with citizens, government and industry. Greater attention is also being paid on directing research efforts to the technology needs of Massachusetts industry by closer coordination with the STEP program.

Annually, the Institute prepares plans for the coming year through a strategic planning process that produces a published Strategic Plan based the mandates assigned to the Institute under TURA. Here is a summary of the elements of the FY 1996 Strategic Plan.

Science Advisory Board

The SAB plans to consider approximately one listing/delisting petition per month, and should clear the backload of petitions now before it. In addition, Board members have expressed an interest in developing a longterm strategy to classify the TUR list of regulated substances into risk categories. These risk categories would be used to encourage the use of less toxic substitutes as a TUR method.

TURA Program Evaluation

TURI will continue to direct the program-wide evaluation effort which will include a four specific elements: a goals fulfillment analysis, a mandate fulfillment analysis, a cost-benefit analysis and a program impact analysis. The consultative committee will meet periodically to assist with the design of the evaluation and a survey of the Large Quantity Toxics Users will be conducted as part of the evaluation process. Two principal documents will be produced in the evaluation. The interim report, due in March of 1997, will present the results of the first survey and numerical data for 1987 to 1995. The final report, completed and submitted to the TURA Administrative Council in March of 1999, will present the results of the survey update and the numerical data for 1987 to 1997 as required by the TUR Act.

Toxics Use Reduction Networking (TURN) Grants Program

"It's your TURN to learn about Toxics Use Reduction". This is the theme of a new TUR Networking (TURN) Grants Program to be sponsored by TURI in FY 96. TURN is a new initiative to acquaint the public with the concept of TUR and the Massachusetts TURA Program, and to assist the public in learning how to access and use TUR information.

Alternative Cleaning Technologies

In FY 96, TURI and OTA will pursue a concerted effort to assist companies in the Commonwealth in their efforts to move to alternative cleaning technologies as they phase out of their use of ozone-depleting chemicals. As a first step in this effort, a survey has been sent to a wide range of Massachusetts industries in an attempt to determine their specific needs concerning cleaning. As of November 1, over 120 replies had been received. The survey results will be used to design specific programs to provide Massachusetts industries with the most relevant information and services about alternative cleaning processes.

Near-Zero Lithographic Ink and Blanket Wash Systems

EPA New England's Environmental Assistance Team (NEEATeam) has provided a grant for TURI to develop a demonstration of "Near-Zero VOC Lithographic Ink and Blanket Wash Systems". Deluxe Printwise of Minnesota is one such system. TURI will be working with Goldman Environmental Consultants to identify other manufacturers of such systems and lithographic printers who are willing to participate in a six month study. The study will include technical, economic and environmental evaluations as well as performance surveys and site visits to promote technology transfer.

The Cleaner Technologies Demonstration Program

A new program, the Cleaner Technologies Demonstration Program, will allow individuals and firms to observe and assess first-hand the value of specific innovative technologies and processes through site visits to participating facilities, and related workshops and publications. The broad goal of the program is to promote the adoption of cleaner technologies, and to demonstrate the effectiveness of toxics use reduction in promoting these technologies to Massachusetts industries. The program is designed to raise awareness of opportunities and benefits, and to examine methods of adoption in order to improve the Institute's process of assisting industry. TURI will establish four or five technology demonstration sites in existing businesses between November 1995 and June 1996. Participation in this program provides the opportunity for a firm to be a visible part of the Commonwealth's effort to move toward cleaner production while enhancing the economic competitiveness of Massachusetts industry.

Surface Cleaning Laboratory

The Surface Cleaning Laboratory will expand its program of services to include lab demonstrations for TUR Planners and other potential users. The Lab is expected to service 50 firms during FY 96. Final Grant Reports will be completed on the two of the Environmental Protection Agency funded projects: the TUR Progress Project and the Alternative Cleaning Technologies Project. Both of these projects will result in published reports in the Institutes publication series.

Technology Transfer Center

The TTC will enable the NBEN businesses to access TUR information online and share information with each other. The interactive page on the WEB will continue to be supported and presentations are planned in 1996 on Internet use for TURA planning and on creating Internet based resource for business groups. The Internet tool called "P2Gems" will be piloted in November 1995. In fiscal 1996, the TTC will continue its acquisitions program, building both physical holdings and electronic database. If the current rate of usage holds, the TTC will provide customized information service to over 1,000 visitors and call-in customers by the end of the fiscal year. The Institute information booth will be erected at four conferences in 1996, and presentations are planned on Internet use for TUR planning and on creating Internet based resources for business groups.

Graduate Program on Cleaner Production

In FY 96, TURI, in conjunction with the Department of Work Environment at the University of Massachusetts, plans to initiate a new graduate program in Cleaner Production. This new program will build on the existing graduate programs in the Department and on the TUR Planner curriculum developed by TURI. Both the Master of Science and Doctor of Science degrees will be awarded.

P2 Homework Problem Book

This effort undertaken with the Universities of New Hampshire and Vermont will be completed and the book of homework problems for engineering students that illustrate P2 will be distributed throughout Massachusetts.

Vocational Educational Pilot Program

The Vocational Education pilot program with Minuteman Vocational Technical School is underway and will continue. The training program that is being developed will be piloted in January of 1996.

TUR Planner Courses

TUR Planner courses will be delivered in at least two locations in 1996. A continuing education strategy is being developed and more continuing education events will be delivered throughout 1996. TURI is preparing an instructor development program devised to keep skills, knowledge and training techniques current among the various instructors who work with TURI to deliver curriculum. Training staff will begin a management training and organizational learning concentration. A TUR Learning Resource Center is also being organized as an adjunct to the TURI's technology transfer center.

Summer Workshops for Public School Teachers

TURI will continue its summer workshops with public school teachers. This program will work closely with the Toxics Use Reduction Networking grants program for community education.

Garment Cleaning Training Program

A Training Course and Manual for garment wet cleaning is being developed under and EPA grant and will be delivered in 1996.

THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION FISCAL YEAR 1995 ACCOMPLISHMENTS

Under the Toxics Use Reduction Act, DEP has a number of responsibilities:

- to incorporate a multi-media focus into its regulatory programs;
- to establish a bias towards toxics use reduction as a preferred means of protecting the environment;
- to develop specific toxics use reduction reporting and planning regulations;
- to collect and distribute fees from the regulated community;
- to manage planning and reporting data; and
- to work with other TURA agencies to implement and improve the TUR Program.

Fiscal Year 1995 was a time of renewed interest and investment in TUR throughout DEP. Significant progress was made to address statutory mandates and DEP took swift, comprehensive compliance and enforcement action to show companies and the environmental community that the Commonwealth is taking TURA Planning requirements very seriously. Expanded TUR staff training and added DEP commitment to undertake a number of cooperative TUR projects with the other TURA agencies has strengthened the overall Program.

The following highlights FY 1995 accomplishments in the areas of Program Implementation and Program Development.

Program Implementation Accomplishments

Release of 1993 Reporting and Planning Data: Data gathered from the community was entered into the computer, quality assurance/quality control procedures were implemented, and corrections were obtained from the regulated community. The data was analyzed and released to the public in November 1994, within five months of the receipt of the data. The 1993 data included projections of future use and byproduct generation from the toxics use reduction plan summaries for the first time.

Facility Wide Inspections to Reduce the Sources of Toxics (FIRST) Inspections: DEP conducted approximately 1,000 FIRST Inspections. This equals roughly 4,000 single medium equivalent site activities (approximately 2,000 single medium inspections and 2,000 single medium "screening activities"). FIRST inspections are whole-facility inspections that simultaneously check for compliance with applicable environmental rules for air, industrial wastewater, hazardous waste, and the Mass. Toxics Use Reduction Act. These inspections are also used to identify TUR and other P2 options, and to promote TUR to the facility as a sound management practice as well as the preferred means of achieving environmental compliance.

On-Site TURA Compliance and Enforcement Activity as Part of FIRST: DEP staff conducted on-site inspections at 60 LQTUs and at 940 facilities who, prior to inspection, were not filers under TURA. The LQTUs were inspected for the completeness of their filing and for completeness of TUR planning. FIRST inspections at LQTUs included a small initiative [20 inspections] that specifically targeted TURA filers who, based on a review of reports and plan summaries, appeared to be higher risks for non-compliance. As a result of all these FIRST inspections, approximately 30 facilities were issued enforcement for their TURA violations, including 6 facilities who were cited for failure to file. A total of at least $66,500 dollars in penalties and back-fees were assessed. Additionally, every applicable facility inspected is referred to OTA and the possible benefits of TUR, regardless of their compliance status.

Enforcement of the Reporting and Planning Requirements: Enforcement of the reporting and planning requirements have included three major efforts: review of 1993 and 1994 reports and 1993 plan summaries for completeness; field enforcement in the form of the DEP-TURA Blitz project; and FIRST inspection activity with regional DEP offices. In addition, DEP staff have contacted every firm that filed in one year and failed to file in a subsequent year in order to determine whether they were legitimately out of the system. This work has generated 220 Notices of Enforcement conferences, 83 Notices of Noncompliance and 29 Administrative Consent Orders with penalties for either failure to plan or failure to submit complete Toxics Use Reduction Reports. As a result of these actions all firms have returned to compliance.

DEP Amnesty Project: DEP initiated a TURA Amnesty program in 1994 that was designed to encourage Large Quantity Toxic Users to file present and back year reports and fees and to develop toxics use reduction plans. By the time the amnesty ended in late 1994, 59 firms came into the system and paid $582,054 in fees to the Commonwealth.

Measuring Progress in Toxics Use Reduction: DEP release of the First Report to the Legislature on Progress Toward the Byproduct Reduction Goal. This report entitled "Progress Towards the Byproduct Reduction Goal of the Toxics Use Reduction Act", analyzed the plan summary data to evaluate reductions in byproduct generation and changes in the efficiency with which chemicals were used between 1990 and 1993, and examined company projections from 1993 to 1998. Figures 3,4 and 5 present actual and projected data from the report on use, byproduct and emissions. Some of the report's key findings:

- byproduct generated by the industrial categories and chemicals subject to TURA reporting since 1990 have decreased statewide by 14.4 percent or 17.7 million pounds between 1990 and 1993

- companies in the industrial categories subject to TURA reporting since 1990 also project a 23 percent decrease in byproduct by 1998. The top companies with the highest use of chemicals reduced their use of the original Toxics Release Inventory (TRI) chemicals by 32 percent and byproduct by 15 percent between 1990 and 1993

- 67 percent of 1993 reporters have reduced one or more chemicals below reporting thresholds

DEP's Blitz which involved inspections of TURA Plans at a representative sample of 59 facilities, also showed that better than nine out of ten (92 percent) planned to implement some form of TUR in the near future.

DEP worked with TURI to improve the baseline accuracy by correcting reporting errors in the 1990 data, the first year of TURA reporting.

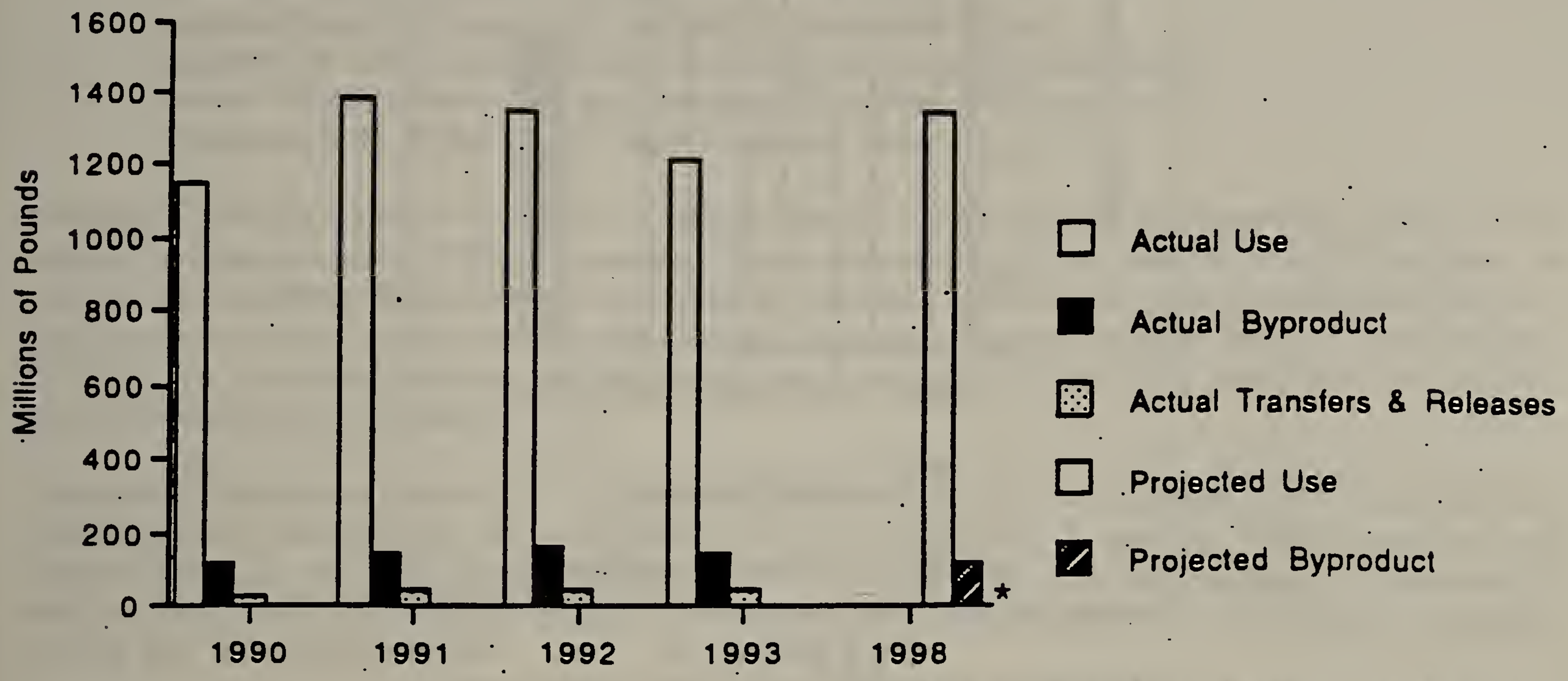
DEP has also developed and begun to implement the methodology for estimating 1987 use, byproduct, and emissions. The Toxic Use Reduction Act establishes 1987 as the date against which progress in toxics use reduction should be measured. TURI, DEP, and OTA received a pollution prevention incentive grant from EPA to develop the 1987 baseline estimate and to evaluate progress in toxics use reduction. As a part of this grant DEP has developed a methodology for estimating the baseline, and begun to survey a statistically significant portion of the TURA universe to extrapolate 1987 data from available information.

Toxics Use Reduction Planner (TUR Planner) Certification: DEP has certified a total of 485 TUR Planners and has recertified 37. Of these planners, many became certified by attending the toxics use reduction planner training offered by TURI and passing an examination offered by DEP. The remaining planners obtained their certification by demonstrating expertise in Toxics Use Reduction Planning at their facility. DEP also offered one toxics use reduction planner exam.

Preparing Large Quantity Toxics Users (LQTU's) for the Annual Reports: As in past years, DEP sent out the updated and revised "Annual Toxics Use Reduction Reporting Package" to all LQTU's in the system as well as to all certified planners. DEP worked with OTA to develop and deliver a series of reporting workshops and answered hundreds of telephone inquiries.

Figure 3

Reported Chemical Use, Byproduct, Transfers and Releases (all reporters)



*no data is submitted on emissions projections

Figure 4

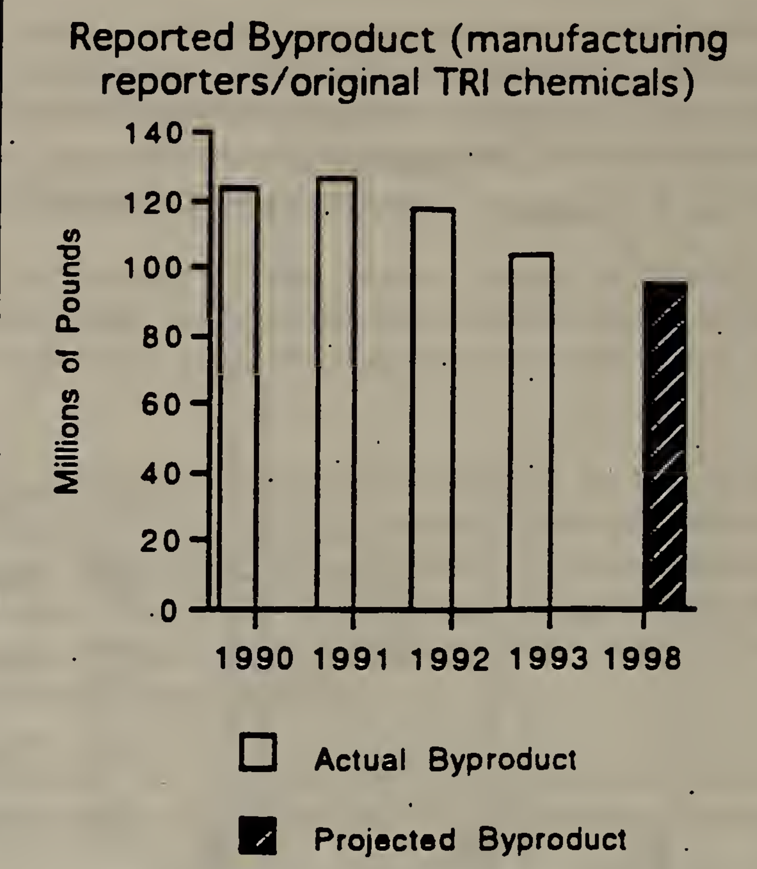


Figure 5

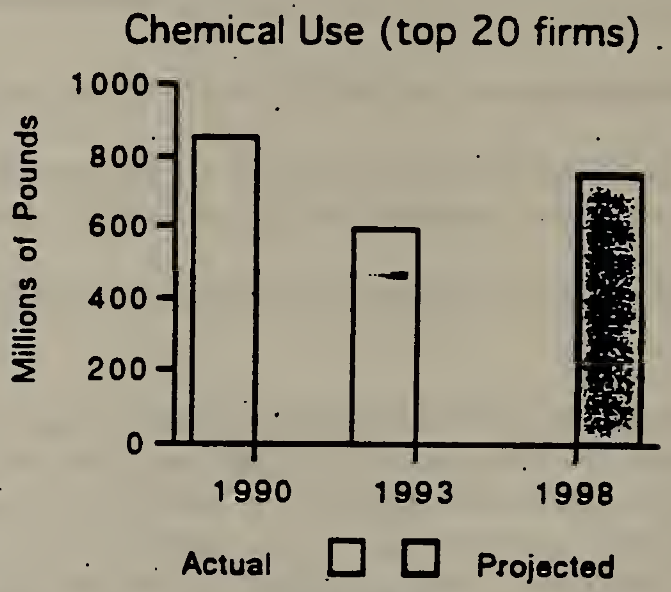
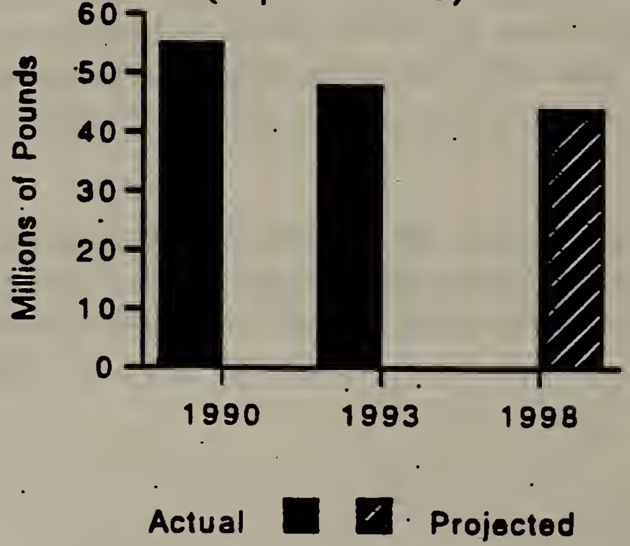


Figure 3b
Byproduct from Chemical Users (top 20 firms)



Supported the Science Advisory Board Delisting Activities: DEP has provided technical information and policy advice regarding applications to delist Sodium Hydroxide (NAOH) and certain metals.

Other Significant Program Implementation Accomplishments Include:

- Received 800 Tier II reports on chemicals stored at Massachusetts facilities
- Revised the TURA Program Brochure
- Responded to approximately 5,000 requests for information
- Supported the TURA Administrative Council and the TURA Advisory Board
- Attended biweekly meetings of the interagency TURA coordinating group
- Participated in the TURA wide Program Evaluation Project.

Promoting TUR via Enforcement: DEP completed a project to ensure that all enforcement documents contain standard language promoting TUR and promoting the services of OTA, TURI, and DEP's TURA program. In addition, all enforcement documents are copied to OTA. Now DEP and OTA can proactively contact all violators who appear to be likely toxics users in order to encourage them to make use of OTA services. From 10/1/94 - 9/30/95, OTA was copied on more than 500 enforcement documents issued by DEP, and of these, at least 14% resulted in consultative site visits by OTA.

Promoting TUR through training: 22 DEP permit staff attended a four-day training program on building TUR into permitting which was developed and presented by TURI, OTA, and DEP. In addition, 30 DEP inspection staff attended training on the FIRST inspection protocol, which includes a TURA compliance inspection module, and 30 DEP staff from the Boston and Regional offices attended a three day training course on facilitating the integration of TUR into various DEP activities.

Promoting TUR throughout DEP: Beginning in FY95, OTA and/or TURI representatives joined the Office of Program Integration (OPI) Teams within the Bureau of Waste Prevention. They help the OPI teams to identify TUR promotion opportunities in the areas of compliance and enforcement; permitting; policy and regulatory development; training; program planning and evaluation; and facility reporting. As a result, DEP staff have built TUR and TUR promotion into a number of rules and policies, including:

- Pollution Prevention Pre-Permitting Scoping Session Policy
- Field Notice of Noncompliance Forms
- Air Quality Operating Permit Applications
- Class A Hazardous Waste Recycling Regulations
- DEP's Printer Partnership
- Pending Alternative Penalty Policy
- Pending Aqueous Cleaner Air Quality Regulations

Program Development Accomplishments

User Segment Regulations: DEP amended the TURA Reporting regulations to require firms to include standardized "process codes" in the description of each production unit included on the annual report.

Reporting Guidance: The Annual Toxics Use Reduction Report guidance document was substantially revised last year. The instructions for filling out the forms were simplified, the chemical lists were clarified, and the "process code" definitions and guidance were added.

Continued Reporting and Planning Policy Development: DEP has worked with the other TURA agencies and the TURA Administrative Council to resolve policy questions on the implementation of the reporting and planning regulations.

Toxics Use Reduction Planner Recertification: DEP developed an application form, procedures and guidance document for renewing toxics use reduction planner certifications and developed a continuing education unit (CEU) preapproval process.

Data Management System Enhancements: The DEP-TURA data management system was expanded to include the new process codes, as well as other data elements designed to make it easier to compare the Federal Toxics Release Inventory database with the DEP TURA database.

Improvements to DEP's Data Analysis Capabilities: DEP developed standardized reports designed to compile and analyze Toxics Use Reduction Plan Summary data submitted by large quantity toxics users. In addition, DEP has developed the ability to incorporate process codes into analytical reports. DEP has also substantially implemented the "end user querying tool" purchased through a 1994 Pollution Prevention Incentives Grant from EPA. This tool has significant implications for making the TURA data more readily available to the public since it allows TURA technical staff, and eventually will allow the public, to develop and run many analytical reports without the assistance of a computer programmer. This system will also allow DEP to download the basic reports into Lotus, Dbase or other similar programs for distribution to the public. Finally, DEP worked with the Toxics Use Reduction Institute and OTA to identify and then eliminate problems with the software used to down load the entire TURA database to an ASCII file that can be distributed to the public for the cost of the disk.

Enforcement Policy: DEP has developed and implemented policies and procedures for enforcing the Toxics Use Reduction reporting and planning requirements.

Inspection Procedures: DEP has developed the procedures for screening facilities to determine whether or not they are subject to TURA, and for evaluating whether firms are in compliance with the reporting and planning regulations.

DEP: STRATEGIC PLAN FOR FISCAL YEAR 1996

While DEP will continue to devote the resources necessary to implement the reporting and planning components of the statute, FY 1996 offers tremendous opportunities to continue broadening the recognition, knowledge and understanding of TUR throughout the agency. As DEP is reorganizing and rethinking it's environmental protection efforts and its methods of interacting with the regulated community. DEP can look creatively - on a broad scale - to incorporate TUR into all of its technical assistance, permitting and enforcement activities.

The following summarizes DEP's planned FY 1996 efforts.

Planned Program Implementation Activities

Release of the 1994 Toxics Use Reduction Reporting Data: DEP has completed data entry and implemented standard quality control procedures for 1994 reporting data. Each of the approximately 600 reports is logged in and reviewed for completeness. After the data has been entered into the computer, 10% of the reports will be audited for data entry accuracy. Once the data has been entered and QC procedures implemented, DEP will generate a computerized "exception report" which identifies any inconsistencies in the data. The exception reports will be mailed to the companies that submitted the suspect data and staff will work with the facilities to obtain corrections. As a result of similar procedures implemented in FY 1995, DEP's data entry error rate should be less than 1% and the reported data should be internally consistent. The 1994 TURA data is expected to be ready for release in December 1995.

Enforcement of the Reporting Requirements: Enforcement of the reporting requirements will again include major efforts to review the 1994 reports and to continue enforcement through both file reviews and field inspections.

Continue FIRST Inspections: DEP will target at least 1,000 facilities for FIRST inspection, including an initiative to target LQTUs that have a "high risk" of TURA violations based upon their Form S and Plan Summary submittals.

Measuring Progress: DEP will:

- submit the second annual report on progress under the Act;
- complete the survey to develop the 1987 baseline estimates; and
- participate with OTA, EOEA and TURI in the Program-wide evaluation efforts.

Provide Improved Training to Inspectors and Permitters: DEP will incorporate TUR into compliance, enforcement, and permitting activity, including the provision of industrial process-specific training. Much of this will be accomplished using a $280,000 Environmental Technologies Initiative grant from US EPA. These funds will specifically be used to develop and pilot innovative training for permit writers, inspectors, and program development staff on the use and promotion of pollution prevention technologies. This initiative will employ multi-media cross training, staff mentor programs, and industry partnerships to provide staff with continuous updating of skills.

Offer a Toxics Use Reduction Planner Examination

Develop Improved Regional Involvement and Communications: A priority for FY 96 will be to increase and strengthen communication to and from Boston and Regional Offices.

Integrate New DEP TURA Program Director in Implementation: The new DEP TURA Program Director will promote enhancements to the existing implementation activities that will include but not be limited to: work planning and tracking; customer service focus and "deliverable" management; time management; continuous improvement systems and improved task communications.

Planned Program Development Activities

Realignment of DEP: DEP's realignment is designed to: improve accountability and integration; increase emphasis on measuring success; establish integrated priority setting; support the watershed management approach: focus on implementation, compliance and enforcement; strengthen regional coordination; improve resource allocation: improve service to our customers and improve management decision making. The process will include but not be limited to: consolidation of bureau's and regions into one management unit; consolidation of the Bureau of Municipal Facilities and the Bureau of Resource Protection; consolidation of budgeting and cost allocation; regional office restructuring; reorganization of BWP and the creation of the strategic development and environmental quality function.

DEP's New Environmental Results Program: Under this initiative, companies will certify that they are willing to be held accountable to certain performance standards and report on compliance to those standards. DEP will focus on increased auditing, aggressive enforcement and technical assistance to companies participating in the program. Efforts will be taken to incorporate TUR incentives into ERP certification and to ensure DEP's adherence to TURA's mandate requiring the Commonwealth to promote TUR as the first means of compliance.

Consolidate Facility-Wide Environmental Reporting: To improve the current system of single-medium reporting requirements, DEP will develop facility-wide, multi-media reporting on an annual basis. The Department will conduct research and perform a pilot study within the fiscal year.

Analytical Capacity Improvements: Continued expansion of the universe of data points included in the "end user querying tool" and continued training of Boston and regional staff in the use of the TURA data base and the "end user query tool". In addition, data points in the system will be expanded to improve usefulness, as well as DEP's ability to record history and the status of LQTU's.

Staff Skills: DEP will work with OTA and TURI to develop and implement TUR "cross training" initiatives for DEP Boston and Regional staffs. Both general awareness and targeted group training programs will be evaluated.

Toxics Use Reduction Plan Update Guidance: Updates to LQTU's toxics use reduction plans must be completed by July 1, 1996. DEP will be working with the regulated community, interest groups and the other TURA agencies to develop guidance for updating plans. This guidance information will be completed by integrating input from various stakeholders and providing a workable solution. DEP expects to have this completed by January of 1996.

Continued Development of Inspection Procedures for TURA Reports and Plans: DEP will develop, with the help of the Office of Program Integration (OPI) and regional staff, a TURA plan analysis protocol which will enhance the work of the LQTU program, further clarify inspection procedures and broaden training offered to compliance and enforcement staff. This effort will also include the development of methodologies and processes for effectively evaluating plan quality.

Identification of User Segments: DEP will work with the regulated community, interest groups and the other TURA agencies to analyze the new "process code" data to develop and promulgate "user segment" regulations.

Develop Policies and Procedures for Disciplining TUR Planners: DEP will be reviewing disciplinary procedures of other DEP organizations to determine the most effective method to develop and implement disciplinary actions with non-performing TUR Planners. Proposed policies and procedures will be drafted with input from various stakeholders.

New DEP TURA Program Manager Integration with Program Development: The new DEP TURA Manager will be responsible for developing program improvements including but not limited to: ensuring TURA participation in various DEP initiatives; integrating TURA concepts and methodologies into DEP activities: interfacing with external stakeholders and implementing continuous improvements in DEP's TURA-related activities.

Waiver Regulations: DEP will develop regulations to allow the temporary waiver of program requirements in all DEP programs to support the analysis and implementation of TUR options at facilities.

Automated Reporting: DEP will initiate a pilot of an automated electronic TURA filing system.

Continuing Education Units: DEP will host a meeting of interested stakeholders to evaluate CEU implementation and effectiveness.

TURA FUND EXPENDITURES

The following information is provided to supplement the information contained in the first annual report. This data accounts for all TURA expenditures of industry fees collected in the Toxics Use Reduction Fund (TURA Fund #149).

Figures 6 and 7 show actual expenditures from the TURA Fund (FY 1991 - FY 1995) and projected FY 96 expenditures for each TURA agency.

Figure 8 shows actual line-by-line expenditures (FY 1991 - FY 1995) as well as estimated FY 1996 expenditures, for each TURA agency.

Attachment A contains lists of TURA staff in each agency.

Overview:

In FY 1995, the TURA program was fully funded and fully operational. Budget revenues in FY 1995 exceeded projections ($4.3 million in fees was projected, actual revenues exceeded $5.5 million). This unexpected FY 1995 revenue resulted partially from the collection of nearly $600,000 through DEP's Amnesty Program and other enforcement activity and partially from the unanticipated late arrival of approximately $400,000 in TURA fees (normally those fees would have been received before July 1, 1994 and credited to FY 94, instead they arrived on or shortly after July 1, 1994 and were counted as FY 95 revenues).

The FY 1996 budget reflects the success of efforts to stop the diversion of TURA funds to the 21E Program. The Cape Cod Community College (CCCC) Job Training Program continues to be supported through the TURA Fund and the targeting of TURI research dollars to fund the Microscale Technology Center was again inserted into the FY 1996 budget. However, the Institute's budget was increased in FY 96 to permit the expansion of the research program. These additional funds will make it possible to:

- finance the TURA Program-wide Evaluation,
- launch the new program to demonstrate new TUR technologies, and
- expand the technology research program.

Toxic Use Reduction Fund (fund 149)

	FY'91		FY'92	FY'93		FY'94 (c)		FY'95 .	d	FY'96 Approp.
STARTING BALANCE	448,462.50	a	1,622,403.84	3,500,000.00	c	4,889,000.00		3,122,770.38		2,002,219.38
FY REVENUES	2,049,163.00		4,757,499.00	4,813,678.50		4,505,000.00	•	5,569,000.00	•	4,490,000.00
TOTAL AVAILABLE	2,497,625.50		6,379,902.84	8,313,678.50		9,394,000.00		8,691,770.38		6,492,219.38
							• estimates			
Direct Expenses										
OTA	255,881.65		1,215,716.67	1,232,522.10		1,492,702.00		1,642,700.00		1,830,882.00
TURA	222,746.01		624,307.00	519,924.94		815,438.62		964,027.00		1,000,332.00
DEP	339,090.00		983,520.00	1,303,219.00		1,401,000.00		1,387,295.00		1,763,114.00
10% of 21E	n/a		n/a	n/a		1,426,089.00	b	1,456,529.00	b	0.00
Cape Cod CC (7504-0101)			n/a	n/a		n/a		125,000.00		125,000.00
Subtotal	817,717.66		2,823,543.67	3,055,666.04		5,135,229.62		5,575,551.00		4,719,328.00
Indirect Expenses										
FRINGE	57,504.00		178,819.00	369,867.00		1,134,000.00	•	1,109,000.00	•	779,757.00
Medicare tax						2,000.00		5,000.00		0.00
	57,504.00		178,819.00	369,867.00		1,136,000.00		1,114,000.00		779,757.00
TOTAL EXPENDITUR	875,221.66		3,002,362.67	3,425,533.04		6,271,229.62		6,689,551.00		5,499,085.00
ENDING BALANCE	1,622,403.84		3,377,540.17	4,888,145.46		3,122,770.38		2,002,219.38		993,134.38
(total available - total expended)										

• FY94 Based on AA expenditures: OTA 1,087,597; TURA 714,267; 10% of 21E 1,152,357

a Revenue collected in FY'90, the first year of the legislation

b 10% of the costs of the 21E prgrm charged to the TURA fund in FY'94 and FY'95 FRINGE RATES: FY91-34.01%; FY92, FY93--27.83%, FY94--33.37%;FY95--31.97% (by law, a % of the amt spent on personnel is charged to any dedicated fund (MGLC 29, s. 5D)

c Based on Comptroller's preliminary FY'94 CAFR

d FY95 spending numbers will be adjusted for actual expenditures in mid-September

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Figure 7

TOTAL AMOUNTS EXPENDED		
FY'91	875,221.66	
FY'92	3,002,362.67	
FY'93	3,425,533.04	
FY'94 (a)	6,271,229.62	
FY'95(a)	6,689,551.00	
FY'96	4,719,328.00	est

TOTAL	24,983,225.99	

TOTAL REVENUES AVAILABLE	
FY'90	448,462.50
FY'91	2,049,163.00
FY'92	4,757,499.00
FY'93	4,813,678.50
FY'94	4,505,000.00
FY'95	5,569,000.00
FY'96(b)	4,490,000.00

TOTAL	26,632,803.00

a total amounts expended include the following: 10% of the costs of the 21E program (FY'94 and FY'95); fringe benefits (FY'94 and FY'95); and the Cape Cod Community College Program (FY'95)

b FY96 revenue estimates may be reduced by $500K if certain substances are exempted from the fee

COMPARISON OF AVAILABLE REVENUES, APPROPRIATIONS AND EXPENDITUTURES

"revenues available" -- unexpended balance from previous fiscal

	FY'91	FY'92	FY'93	FY'94	FY'95	FY'96 Est
Revenues Available	2,497,625.50	6,379,902.84	8,313,678.50	9,394,000.00	8,691,770.38	6,492,219.38
Appropriations	1,275,000.00	3,010,000.00	3,709,198.00	4,249,347.00 *	4,320,347.00	4,594,328.00
Expenditures	875,221.66	3,002,362.67	3,425,533.04	4,502,880.62 *	4,718,522.00 *	5,374,085.00

* these figures reflect OTA, DEP, and TURI direct and indirect expenditures only. The $1.5M appropriated to support the 21E program, the fringe cost associated with 21E, and the $ for Cape Cod Comm. College are not included.

EXPENDITURES

TOXIC USE REDUCTION FUND (FUND NUMBER 149)

Sub	Description	FY'91 OTA	FY'91 DEP	FY'91 TURI	FY92 OTA	FY92 DEP	FY92 TURI	FY'93 OTA	FY'93 DEP	FY'93 TURI
		2020-0100	2210-1000	7220-0004	2020-0100	2210-1000	7220-0004	2020-0100	2210-1000	7220-0004
	APPROPRIATION	*350,000.00*	*475,000.00*	*450,000.00*	*1,300,000.00*	*627,711.00*	*1,082,289.00*	*1,479,205.00*	*763,856.00*	*1,466,137.00*
00	All Expenditures									
AA	Regular Emp. Comp.	119,306.55	53,319.44	114,634.00	384,112.97	310,160.00	327,433.00	659,574.37	440,168.91	282,900.00
BB	Emp. related exp (meals, memberships, conferences,etc)	5,463.10		5,448.00	33,467.51	147.00	15,746.00	22,085.42	12,520.18	20,647.00
CC	Spec. Emps.(Interns, seasonals, bd mbrs)			30,736.00	143,804.43		91,138.00	88,592.93	0.00	85,697.00
DD	Chargebacks	2,221.04			4,655.73		75,427.00	5,723.15	0.00	5,065.00
EE	Admin. Expenses (supplies, postage, phones, ads)	30,959.96		18,690.00	115,678.39		77,494.00	98,710.32	8,712.85	94,613.00
FF	Facility Operations						24,449.00	3,735.38	0.00	66,292.00
GG	Space rentals and related expenses			127,160.00	4,817.50		103,172.00	759.42	0.00	
HH	Consultants	61,336.13	157,500.00	14,416.00	209,902.07	314,000.00	130,675.00	257,395.35	46,196.54	467,622.00

			FY'91			FY92			FY'93	
		OTA	DEP	TURI	OTA	DEP	TURI	OTA	DEP	TURI
		2020-0100	2210-1000	7220-0004	2020-0100	2210-1000	7220-0004	2020-0100	2210-1000	7220-0004
JJ	**Operational services (janitors, HW, snow, rubbish removal)**		11,926.57	0.00	3,675.00		1,279.00	988.00	2,332.93	89,639.00
KK	**Equipment**	34,468.35		28,006.00	307,630.47		136,029.00	69,242.68	9,993.53	156,921.00
LL	**Eqpmt leases**	2,126.52			7,972.60		678.00	25,715.08	0.00	4,333.00
MM	**Purchase Service**									29,490.00
RR	**Benefit Programs**									
	EXPENDITURES	*255,881.65*	*222,746.01*	*339,090.00*	*1,215,716.67*	*624,307.00*	*983,520.00*	*1,232,522.10*	*519,924.94*	*1,303,219.00*

Sub	Description	FY'94			FY'95			FY'96 Estimated		
		OTA	DEP	TURI*	OTA	DEP	TURI*	OTA	DEP	TURI*
		2020-0100	2210-1000	7220-0004	2020-0100	2210-1000	7220-0004	2020-0100	2210-1000	7220-0004
	APPROPRIATION	*1,829,313.00*	*953,897.00*	*1,466,137.00*	*1,850,323.00*	*1,005,734.00*	*1,464,290.00*	*1,830,882.00*	*1,000,332.00*	*1,763,114.00*
00	All Expenditures									
AA	Regular Emp. Comp.	1,087,597.00	714,267.46	366,683.00	1,139,989.00	802,070.00	431,656.00	1,209,214.00	855,606.00	
BB	Emp. related exp (meals, memberships, conferences,etc)	35,088.00	7,923.53	29,065.00	36,467.00	3,081.00	45,410.00	40,781.00	2,500.00	
CC	Spec. Emps.(interns, seasonals, bd mbrs)	51,499.00		102,222.00	68,669.00	0.00	80,574.00	124,000.00	0.00	
DD	Chargebacks	24,565.00		4,124.00	22,206.00	13,427.00	5,257.00	24,779.00	13,544.00	
EE	Admin. Expenses (supplies, postage, phones, ads)	136,522.00	10,418.41	180,402.00	120,989.00	29,150.00	198,544.00	170,962.00	28,359.00	
FF	Facility Operations			24,271.00	0.00	0.00	22,703.00	0.00	0.00	
GG	Space rentals and related expenses	3,055.00			4,968.00	72,456.00	0.00	8,547.00	77,323.00	
HH	Consultants	123,622.00	19,922.60	587,164.00	126,409.00	19,253.00	474,079.00	218,500.00	0.00	

		FY'94			FY'95				FY'96 Estimated		
		OTA	DEP	TURI*	OTA		DEP	TURI*	OTA	DEP	TURI*
		2020-0100	2210-1000	7220-0004	2020-0100		2210-1000	7220-0004	2020-0100	2210-1000	7220-0004
JJ	Operational services (janitors, HW, snow, rubbish removal)	3,853.00	7,999.86	103,794.00	300.00		22,498.00	71,899.00	10,000.00	23,000.00	
KK	Equipment	23,098.00	54,906.76	26,496.00	118,642.00		2,092.00	45,677.00	15,000.00	0.00	
LL	Eqpmt leases	3,803.00		2,331.00	4,061.00		0.00	5,889.00	9,099.00	0.00	
MM	Purchase Service			18,688.00				5607			
RR	Benefit Programs										
	EXPENDITURES	1,492,702.00	815,438.62	1,445,240.00	1,642,700.00	a	964,027.00	1,387,295.00	1,830,882.00	1,000,332.00	1,763,114.00

Attachment A: TURA Agency Staff

FISCAL YEAR 95:

OTA STAFF:

Program Manager VI	Barbara Kelley
Environmental Analyst V	Rick Reibstein
Environmental Engineer V	William McGowan
Environmental Engineer IV	Paul Richard(6 months)
Environmental Engineer IV	William Griffin
Environmental Engineer IV	Scott Fortier
Environmental Analyst IV	Ken Soltys
Environmental Analyst IV	Rich Bizzozero
Environmental Analyst IV	George Frantz
Environmental Engineer III	Alan Buckley
Environmental Engineer III	Joe Paluzzi
Environmental Analyst III	Lisa Dufresne(6 months)
Environmental Analyst III	John Flynn
Environmental Analyst III	James Cain
Environmental Engineer II	Marina Gayl
Environmental Engineer II	Roland Beaudette
Environmental Engineer II	Vacant
Environmental Analyst II	Hazrat Noorzad
Environmental Analyst II	Jennifer Hunt
Regional Planner IV	Hugh Pilgrim
Financial Analyst	Richard Torborg
Program Coordinator III	Susan Altree Lanza
Program Coordinator II	Grace Caner Offen
Program Coordinator II	Audrey Tyler-Casey
Administrative Assistant II	Vacant
Administrative Assistant I	Teresa Freyer

CONTRACT EMPLOYEES:

Environmental Engineer IV	John Raschko
Environmental Analyst(EPA Grant)	Cynthia Barakatt
Environmental Analyst III(EPA Grant)	Lisa Dufresne(6 months)
Systems Analyst III	Philip Milmoe
Information Coordinator	Michael Frishman(6 months-Vacant)
Intern Engineers:	William McLaughlin
	Arun Venkatesh/John LaPlante
	Thomas Phelps/Azin Kavian
	Michael Maddocks
	Ariadne Kuczwaj(6 months)
	Patrick Monteiro(EPA Grant)
	Peter Gagnon(EPA Grant)

EOEA STAFF:

Program Manager IX	Jamy Buchanan/Martin Suuberg
TUR Executive Director	Gina McCarthy
STEP Coordinator	Paul Richard(6 months)

Toxics Use Reduction Institute
Staff Positions
Fiscal Year 1995

STAFF	POSITION/EMPLOYMENT STATUS
1. Barrus, Diane	Technology Transfer Assistant, TP
2. Basanese, Anne	Program Events Coordinator, FT
3. Becker, Monica	Research Associate, FP
4. Clark, Janet	Technical Transfer Center Manager, FP
5. Ellenbecker, Mike	Deputy Director/Associate Director Research, FP
6. Geiser, Kenneth	Director, FP
7. Harriman, Elizabeth	Research Associate, FP
8. Hensley, Josephine	Instructional Design Coordinator/Instructor, FP
9. Jankauskas, Jay	Research Associate, FT
10. Johnson, Beverly	Associate Director for Administration, FP
11. LeBlanc, Carole	Surface Cleaning Laboratory Manager, FP
12. Luskin, Jack	Associate Director for Education and Training, FP
13. Schley, Janette	Planner, FT
14. Siegel, Jodie	Planner/Trainer, FP
15. Smith, Robin	Secretary/Education and Training, TP
16. Tivnan, Robert	Planner/Trainer, FP
17. Thomas, Karen	Research Associate, FT
18. Whiting, Evelyn	Receptionist/Secretary, FP

Legend:
FP = Full-time, (37.5 hours per week), state approved, permanent position of one year or longer.
FT = Full-time, non - state approved, temporary position of one year or longer.
TP = Full-time, non - state approved, temporary position.
PT = Part-time, non - state approved, temporary position of one year or longer.

The staff positions identified above reflect TURI's core staff only. Core staff positions are those essential to the day-to-day operations of TURI, and in most instances, are state-approved permanent positions. In addition to these core staff positions, TURI employs temporary staff of short duration, (generally less than one year), to execute certain projects as needed. Temporary staff include University Research Fellows, University Student Assistants, Temporary Clerical Administrative Staff, and Special Project Staff.

STAFF NAME	TITLE	PROGRAM	FUNCTION
Funded by TURA Funds			
Roberta Baker	EA IV	Region	Western - TURA integration/inspections
Anita Baltzersen	EA IV	Region	Central - TURA integration/inspections
Cynthia Chaves	RP IV	LQTU	Regulation & Policy Development
Steve Edelheit	RP IV	OPI	Bureau Training Coordinator
Doug Fine	RP V	OPI	Acting Director
Susan Green	EA IV	LQTU	Data Systems Manager
Lynn Heisey	RP II	LQTU	Reporting & Planning Specialist
Walter Hope	RP I	LQTU	Program Administration
Sandra Hurlbut	EA IV	Region	Northeast - TURA integration/inspections
Tracy Klay	RP III	LQTU	TUR Planner Certifications, enforcement
Geri Lambert	EA V	Enforcement	Training, penalty collection & tracking
Bill McGovern	SA III	MIS	TURA/FMF/Business Objects Programmer
Carl Natho	EA IV	Region	Southeast - TURA integration/inspections
Susan Peck	EA VI	LQTU	Program Director (thru 4/95), Sr. Policy Analyst
Gene Romero	EA IV	IWW	Integration of TURA in IWW Regs. & Operations
Martha Roy	EA III	Region	Central - TURA integration/inspections
Alissa Whiteman	Counsel II	Legal	LQTU program attorney
Funded by other funds			
Robert Bois	EEV	LQTU	TURA related enforcement
Patrica DeeseStanton	Admin IX	BWP	Assistant Commissioner
Steven DeGabriele	M8 (acting)	HM	Hazardous Materials Division Director •
Thomas Hughes	RPIV	OPI	Bureau Policy Coordinator
Kim Kreiton	RPIII	OPI	Bureau Compliance/Enforcement Coordinator
Karen Levy	RPI	LQTU	Data Analyst
Arleen O'Donnell	--	--	Acting Deputy Commissioner
Laura Rome	RPIII	OPI	Bureau Program Planning Coordinator
Paul Walsh	RPIII	WSC	Data & Report Review
Susan Willis	EAIV	OPI	Bureau Reporting Coordinator

Other Staff, Funded with TURA Funds

Temp Staff 2-5 as needed.

• *Acting Program Director (New Program Director hired 10/95)*